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EUROPEAN AXIS SIGNAL INTELLIGENCE IN WORLD WAR II
AS REVEALED BY "TICOM" INVESTIGATIONS
AND BY OTHER PRISONER OF WAR INTERROGATIONS
AND CAPTURED MATERIAL, PRINCIPALLY GERMAN

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VOLUME 6--THE FOREIGN OFFICE CRYPTANALYTIC SECTION

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Date

Logged	27 MAY 1947
RS:File No.	3547-47
NB RS No.	97795
Indexed	

Prepared under the direction of the

CHIEF, ARMY SECURITY AGENCY

1 May 1946

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VOLUME 6

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VOLUME 6

THE FOREIGN OFFICE CRYPTANALYTIC SECTION (PER Z S)

Chapter I. History and Leading Personalities

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1. Introduction.--A paper covering the genesis, history, and operations of the German Foreign Office Cryptanalytic Section can claim neither completeness nor absolute accuracy. The reasons for this deficiency are attributable to the paucity of data available as a basis for the paper.

In the first place, the existence of the Foreign Office Cryptanalytic Section (Pers Z S) while suspected, had never been definitely established until the Section was captured in April 1945. There was consequently little or no background information to assist the interrogators. Secondly, the exploitation of this specific target was the first major exploitation undertaken by TICOM. As such, it suffered from the general lack of experience found in new undertakings.

The interrogations, it is felt, were not extensive enough. So large was the field covered by the Pers Z S cryptanalytic effort -- over fifty countries during a period of twenty-five years -- that few interrogators were available who were competent to meet the German cryptanalysts on their own ground. Most of the interrogators and target officers were men who had not enjoyed any extensive experience on diplomatic systems; their work for some years had dealt with military problems. Faced with the necessity of conducting complete interrogations on subjects with which they were unfamiliar or on which, for security reasons, they could not openly appear to be well-informed, there were inevitably areas which were not completely covered. The interrogations, therefore, cover little more than those highlights which the Germans most readily recalled. Cryptanalysis was emphasized, while intelligence was almost completely neglected.

In May 1945, the TICOM principle of requiring prisoners to do extensive "homework," that is, write papers, as detailed as possible and in their own words, was not fully developed. The only Pers Z S report of this type, a most significant document from the cryptographic point of view, was issued with an apology for its preparation.¹

There are equally serious deficiencies in the Pers Z S documents which were captured by TICOM. Little of the material had any currency; most of the documents antedated 1942. The records of the Turkish group and the records of the Mathematical-Cryptanalytical Subsection were alleged to have been and most probably had been completely destroyed prior to capture.

The account which follows, therefore, cannot pretend to be a complete statement as to the Pers Z S organization, its cryptanalytic effort, or its achievements. It is based entirely upon TICOM sources, and must therefore be regarded as a compilation of highlights, and a listing of certain clues which suggest facts and conclusions but do not document them.

2. German Foreign Office Organization for Cryptanalysis, Communications, and Security-- For many years the cryptanalytic activities of the German Foreign Office were concentrated in the "Special" (Cryptanalytic) Section, Z Branch, Personnel Bureau (Personal Z Sonderdienst, or Sonderdienst des Referats Z in der Personalabteilung des Auswaertigen Amtes). The section was generally called Pers Z S, an abbreviation of its short German title. It engaged in cryptanalysis of foreign diplomatic codes and ciphers. It did not work on military problems.²

Z Branch, referred to hereinafter as Pers Z, was headed by Minister (Gesandter) Selchow. Z Branch was latterly organized into four sections, one of which was the foregoing "Special" (or Cryptanalytic) Section (Sonderdienst, or Pers Z S). The Cryptographic Section (Chiffrierabteilung, or Chiffrierdienst, abbreviated Pers Z Chi), headed by Senior Specialist (Oberregierungsrat) Horst Hauthal, was engaged in the compilation and distribution of the codes and ciphers used by the Foreign Office. The Communications Section (Referat fuer Funkwesen, or Funkreferat, abbreviated as Pers Z F), headed by Senior Specialist (Oberregierungsrat) Ernst Hoffmann, handled the Foreign Office communications systems, including teletype circuits, telephone switchboards and radio links. The Administrative Section (Generalreferat, abbreviated Pers Z Gen), headed by Senior Specialist (Oberregierungsrat) Dr. Roy, handled personnel and administrative problems for the whole of Z Branch.³

¹See I 89, Dr. Rohrbach's "Report on the American Strip Cipher"

²TICOM I 22 para 3

³I.1 p 14

3. History and Strength, 1919-1937-- The Foreign Office code and cipher work had originally been done in Bureau I (Abteilung I), the normal administrative bureau in a German governmental department. Its name at that time was probably the "Political Intelligence Bureau." As its cryptanalytic and cryptographic work expanded, it changed its name, taking the cover afforded by "Personnel Bureau."⁴ Another source stated that the section was formerly known as the Cipher Section (Chiffrierabteilung), later concealed under the lengthy cover-name listed in Paragraph 2 above.⁵ As late as 1925 the cryptographic activities and the cryptanalytic activities were unified under one head.⁶

It is not known when the Foreign Office started its cryptanalytic endeavors after the first World War. It is known that Zastrow, the Pers Z S expert on American systems, had seniority in the organization dating from December 1st, 1918. In any event, an uncaptioned personnel list, dated May 1919, listed the names of 63 men and 11 women.⁷ While the significance of the list is unknown, it does include the names of such well known personalities as Kasper, Kunze, Schauffler, Scherschmidt and Zastrow, all of whom were Pers Z S cryptanalysts in 1945. It is probably safe to assume that Foreign Office cryptanalytic efforts were well advanced before the conclusion of the peace treaty.

No documentary evidence is available on the strength of the organization during the period 1920-1937. In 1945 Paschke and Schauffler stated that, beginning with 20-30 people in 1918, the organization grew to a strength of approximately 50 in 1930.⁸ This statement tends to support the view that the May 1919 list of 63 persons included more than cryptanalytic personnel, and was probably a list of Foreign Office cryptographic, communications and cryptanalytic personnel.

⁴I 1 p 14. A sentence in Document T56, Reports of the A Group, Page 52, gives a clue as to the section's former name: "The solution..(was)... achieved in the E Section of the Political Intelligence Bureau of the Foreign Office (E(entzifferungs??) abteilung der Politischen Nachrichtenstelle des Auswaertigen Amtes.

⁵I 22 para 3. Statement from Dr. Rohrbach. Since Dr. Rohrbach did not join Pers Z S until after the outbreak of war, the statement should be taken with reserve.

⁶DF 17 T3273 p 3

⁷DF 17 T3273

⁸I 22 para 125

4. Expansion, 1937-1939.--Captured documents show that the whole strength of Pers Z (including the four sections listed above in Par 1) came to 77 persons on November 1, 1937, and to 72 persons on July 1, 1938.⁹ Unfortunately these lists did not give a detailed sectional breakdown. At least 20 persons were engaged in cryptographic work (compilation, security and message center), and it seems safe to deduce that the Cryptanalytic Section (Sonderdienst, or Pers Z S) did not dispose of a number greater than the estimate given above for the year 1930. Indeed, it could be assumed that the 1930 estimate of 50 persons was excessive. Data for the year 1939 tend to confirm this impression. Paschke and Kunze estimated the 1939 Pers Z S strength at 80-100 people.¹⁰ A captured document gives a detailed breakdown of Pers Z S personnel as of December 1, 1939, showing a total strength of 92 persons.¹¹ Other documents show that 45 new appointments were made between September 1, 1939 and an unspecified date in November 1939.¹² Of these, 22 were regular appointments (Etatsstellen) and 23 were newly requested war service appointments (neuaufgeforderte Kriegsstellen). If the strength on December 1, 1939 were 92, and if 45 persons had been hired since September 1, 1939, then it seems reasonable to estimate the Pers Z S strength prior to the war as something less than 50 persons.

The available documents for the period 1937-1939 give the impression that all of Z Branch might have suffered from personnel shortages and inertia on the part of higher administrative authorities. The job descriptions (Begründungen) accompanying the 1938 recommendations for promotion show that Dr. Kunze had been a specialist (Regierungsrat) since 1923, and that Paschke and Scherschmidt had held the same grade since 1927. Attention was drawn to the fact that:

"Positions with comparable activities and responsibilities in other ministries are given the grade of Principal Specialist (Ministerialrat) or Senior Specialist (Oberregierungsrat). This in spite of the fact that the personnel concerned are, usually younger and have had less time in grade."¹³

⁹ TF 24, Pers Z/1147, and 1938 personnel list

¹⁰ I-22, para 125

¹¹ TF 24, Pers Z S Organization as of December 1, 1939

¹² TF 24, Personnel list, dated November 1939

¹³ TF-24, 1938 Begründungen. Such complaints are apt to be generic in governmental organization. No valid conclusions could be drawn without comparable data from other ministries.

The Cryptographic Section (Pers Z Chi) complained in the same year that it could no longer function efficiently without additional personnel.¹⁴ Ten of its thirteen cryptographers were over fifty years of age, six of them over sixty. Night work represented too much of a strain for men of this age.

"Due to the overloading of the Cryptographic Section, outgoing messages cannot be enciphered and checked with the necessary care. This regrettable state of affairs was most noticeable during May 1938, and September 1938, when the political atmosphere was at its tensest."

As of December 1, 1939, then, the Cryptanalytic Section (Pers Z S) had a strength of 92 persons. It was organized as follows:

LOCATION*	UNIT	STRENGTH	TOTAL
Luisenstift, under Dr. Schauffler	Schauffler's Group (Gruppe)	8	
	Paschke's Group	13	
	Scherschmidt's Group	10	
	Brandes' Group	11	
	Zastrow's Group	9	
	Karstien's Group	5	
	Kasper's Group	4	
	Hagen's Group	4	
	Records Group (Archiv)	4	
	Clerical Personnel	3	72
Jaegerstrasse 12 III, under Dr. Kunze	Special Group (Stosztrupp) [Mathematical cryptanalysis]	20	20 92

* The exact location of Pers Z S prior to 1939 is unknown. In 1938 parts of the organization were housed at Wilhelmstrasse 75. In February 1939, unidentified elements were housed in the Koenigin Luise Stiftung, Berlin-Dahlem, Podbielski Allee 78. This location was called the "Luisenstift." Nothing is known as to the dates for occupation or evacuation of the quarters in Jaegerstrasse 12 III.

5. Further Wartime Expansion.--No detailed figures are available to cover the Z Branch expansion during the early war

¹⁴ TF 24, Supplement to Pers Z/1400 of Nov 2, 1938

¹⁵ TF 24, Personnel List dated October 1, 1940

years. By October 1, 1940, there were 290 employees in the entire branch, a three hundred per cent increase over the previously quoted figure of 72 for July 1, 1938.¹⁵ On October 19, 1940 Pers Z S was stated to occupy quarters in three buildings, implying a further expansion over the 1939 figure.¹⁶

The last available statements as to total personnel are dated in January 1941.¹⁷ At that time, Dr. Kunze reported he had 53 persons employed in the Jaegerstrasse, while Schauffler reported 88 persons at the Dahlem-Podbielski Allee location, a total personnel of 141.

In spite of the expansion, there is good evidence that the Pers Z S leaders still considered their personnel inadequate to cope with all problems. On November 26, 1940 (Schauffler?? - signature illegible) submitted a list of cryptanalytic problems ranging through seventeen countries, all of which were either completely neglected or insufficiently exploited due to personnel shortages.¹⁸ He requested additional personnel to the number of 62, detailing the problems to which they would be assigned. In January 1941, Dr. Kunze requested 57 additional employees, 28 of whom would be employed on American and British problems, and Schauffler requested an additional increment of 17. Nothing is known from documentary sources as to whether or not these requests were favorably received.¹⁹

¹⁵TF 24. Personnel List dated October 1, 1940

¹⁶Berlin-Dahlem, Im Dol 2-6,5; the Luisenstift; and "some rooms" in the Ethnographic Museum (Museum fuer Voelkerkunde) at Prinz Albrecht and Koeniggraezter Streets. These housing arrangements were to remain substantially unchanged until December 1943. The Jaegerstrasse quarters were in use as late as January 18, 1941.

¹⁷TF 24. Letters listing strength and requirements. One, dated January 18, 1941 is headed "Jaegerstrasse 12 III" and signed "K" (almost certainly Kunze). The other, headed "Dienststelle Podbielski Allee," is dated January 14, 1941 and signed by Schauffler.

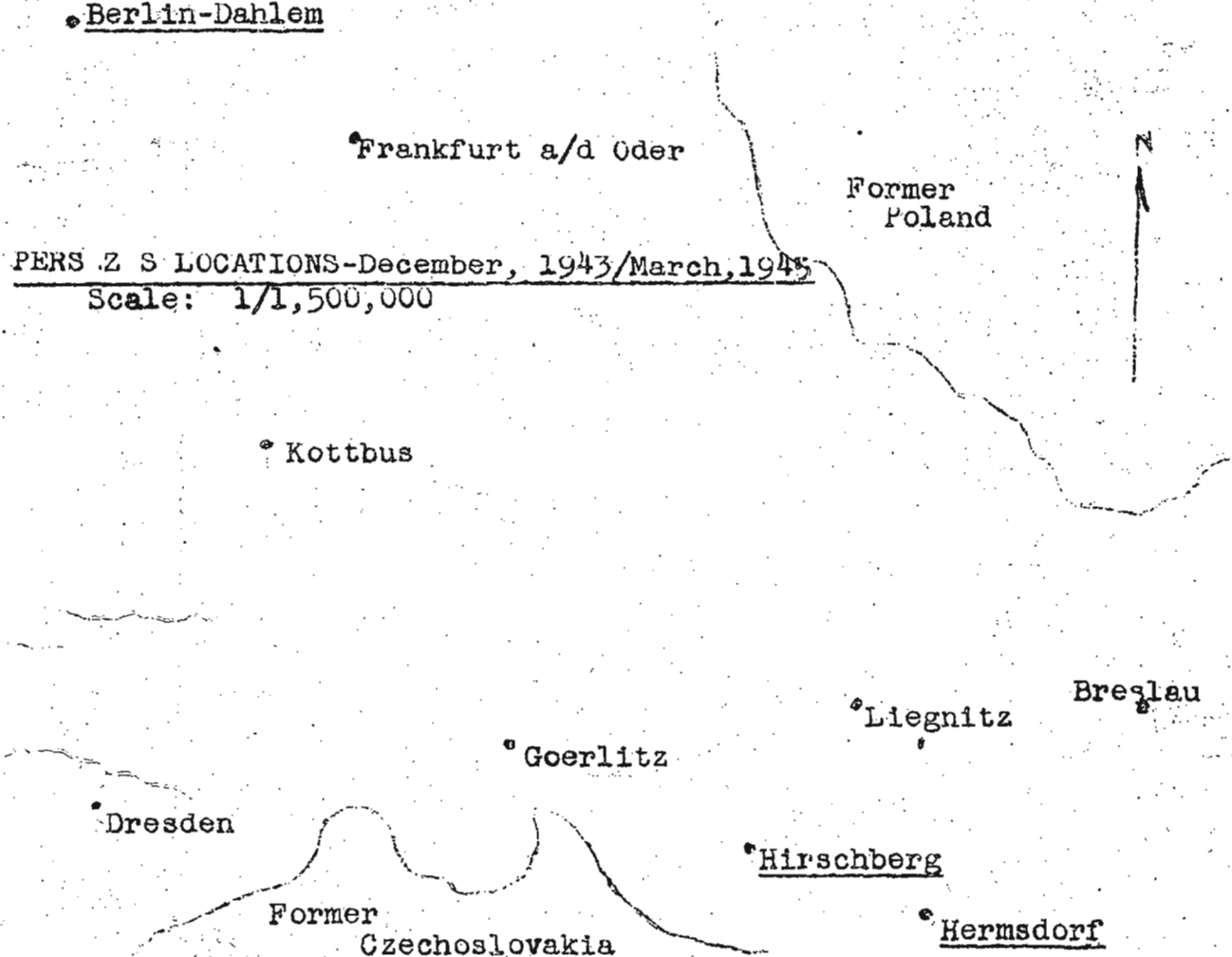
¹⁸TF 24. Letter of Nov. 26, 1940.

¹⁹TF 24. Two letters, Pers Z/5705, dated November 12, 1941, and a letter from the Personnel Bureau of the Foreign Office, dated January 17, 1942, may be revealing. In the first letter, Minister (Gesandter) Selchow, head of Pers Z, requested the immediate allocation of 155 Labor Service Girls (Arbeitsmaiden) due to the "special haste incident to the execution of the Foreign Minister's new request ("wegen der besonderen Eile der Durchfuehrung der vom Herrn Reichsminister gestellten neuen Anforderung"). In the second letter, Principal Specialist (Legationsrat) Schwaeger, referring specifically to the Pers Z request for 313 regular employees, stated that the 1941 budgetary allocations had been exhausted. He cited the critical state of the labor market, and concluded that the request should be rephrased or rejustified on the ground that it was essential to the war effort ("aus kriegswichtigen Gruenden").

When the Section was captured in April 1945, its leaders stated that the peak in personnel was reached in 1945, when 180-200 persons were employed.²⁰ Another employee "thought" the total personnel was about 120.²¹ Regardless of conflicting statements, it seems clear that Pers Z S never became a large organization, and that its personnel never exceeded two hundred in number.

6. Organizational and Geographical Changes, 1943-1945.--No major changes were made in the organization until December 1943. At that time, Berlin was partially evacuated on account of the

• Berlin-Dahlem

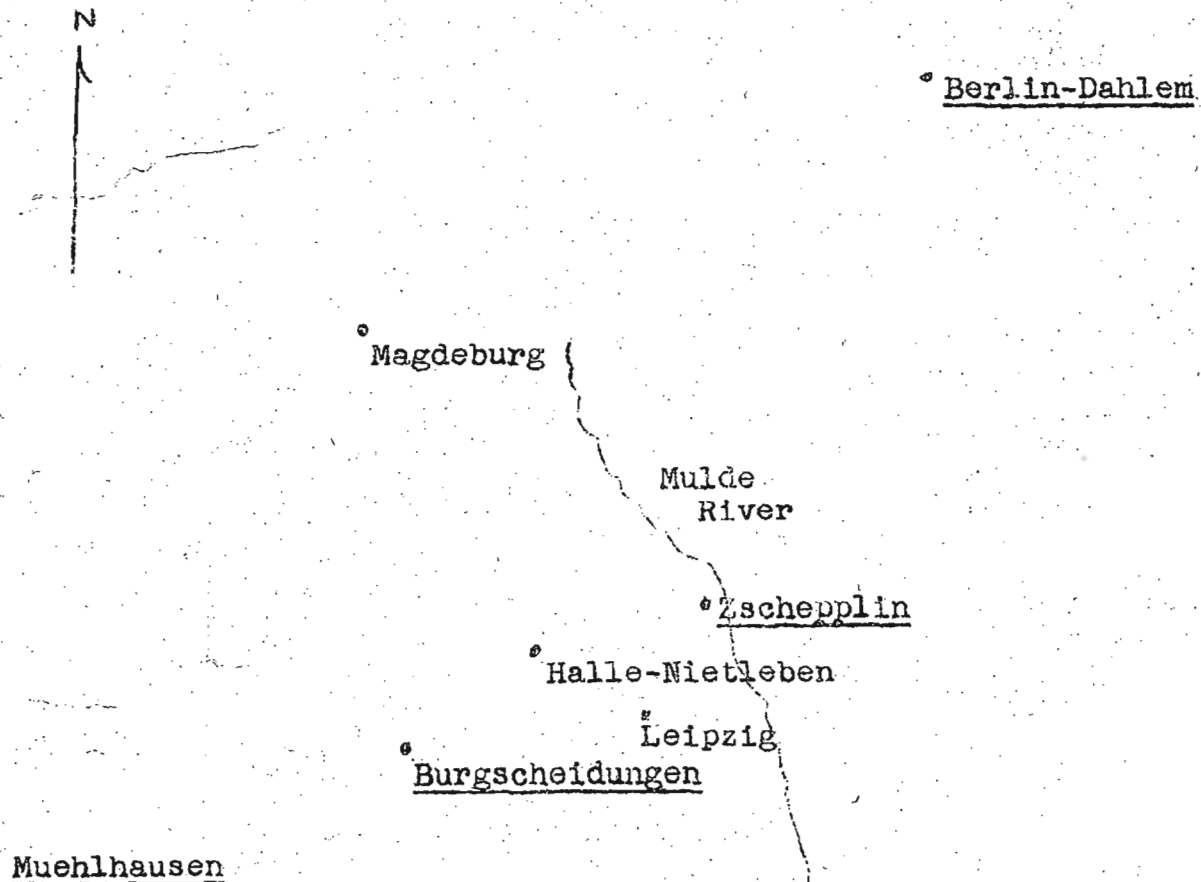


²⁰ I 22, para 125

²¹ I 22, para 34

RAF bombings, and Pers Z S was split into one large group and two smaller groups. Dr. Schauffler and Dr. Paschke remained in Berlin-Dahlem, at Im Dol 2-6,5, with the main party (Stammabteilung). This party may have been reinforced by "parts of.....Signal Intelligence Agency, Supreme Command of the Armed Forces (OKW/Chi)" which had been bombed out at the same time.²² A part of Dr. Paschke's Subsection, under the leadership of Specialist (Regierungsrat) Dr. Karstien, went to Hirschberg in the Riesengebirge. The Mathematical-Cryptanalytic

PERS Z S LOCATIONS- April, 1945
Scale: 1 / 1,500,000



²² I-96, p 5. There is some evidence that there was an actual unification of certain Pers Z S-Signal Intelligence Agency of the Supreme Command of the Armed Forces (OKW/Chi) subsections after November 1943. For detailed discussion, see Chapter 4.

Subsection under Dr. Kunze, together with the I.B.M. machinery, was evacuated to Hermsdorf in Silesia. The three parties attempted to work as one, with a daily courier service linking all three locations.²³

In February and March 1945, as the Russian advances became more threatening, the Hirschberg and Hermsdorf locations were evacuated. The Karstien group moved directly from Hirschberg to Burgscheidungen in the Unstrut area. They were joined there in April by Dr. Schauffler and some of the former Berlin-Dahlem group. Dr. Kunze's Mathematical-Cryptanalytic Subsection was split up, elements proceeding from Hermsdorf to Muehlhausen, and the majority, including the leaders, to Zschepplin. Dr. Paschke brought most of his subsection from Berlin to Zschepplin. An unidentified Pers Z S group went from Berlin to the Army-Air Force Signal School at Halle-Nietleben, later proceeding to Zschepplin.²⁴ No intercept traffic was received after March 1945. Some cryptanalytic work was continued on back material until the Burgscheidungen-Zschepplin areas were overrun in April 1945.

7. Important Personnel.--This paragraph consists of a compilation of data on some thirty Pers Z and Pers Z S personalities.

a. Z Branch (Pers Z) Personalities.

(1) Minister (Gesandter I Kl.) Selchow. Selchow was chief of Z Branch. Little is known of his background. Mention was made of the fact that he had engaged in similar work during World War I.²⁵ A personnel list, without a caption, dated May 1919, lists his name along with 62 others, presumptively in Foreign Office cryptographic or cryptanalytic activity.²⁶ The date of his appointment as head of Z Branch (Referat Z) is unknown. One source states that he had been head of the Branch since 1919.²⁷ He is listed as a Principal Foreign Office Specialist (Vortragender Legationsrat) on November 1, 1937.²⁸ He held the rank of Minister (Gesandte) in 1945. A document dated 1941 contains recommendations for the promotion of Senior Specialists (Oberregierungsraete) Paschke, Schauffler and

²³ See Chart 6-1, and I-22, p 23

²⁴ I 1, p 7

²⁵ I 143, para 44

²⁶ DF 17; T3273

²⁷ I 1, p 17

²⁸ TF 24, Personnel List of November 1 1937

Langlotz to Principal Foreign Office Specialists (Vortragende Legationsraete).²⁹ It might be deduced from this document that Selchow had been appointed Minister in 1940 or 1941.

But little more is known as to his ability. Statements from personnel in other cryptanalytic agencies imply that he was jealous and secretive about Z Branch (Referat Z) activities. His Pers Z S subordinates characterized him as "a competent administrator who knew little about cryptanalysis and was content to leave the specialists to run their affairs as it seemed best to them."³⁰

Last reported in Salzburg in March 1945, he was not apprehended by TIGON.

(2) Senior Specialist (Oberregierungsrat) Dr. Roy. Dr. Roy was head of the Administrative Section (Pers Z Gen) in Z Branch. He is reported to have been with Z Branch since the early 1920's. Taken prisoner at Muehlhausen in April 1945, he was released as being of little importance to target teams and interrogators.

(3) Senior Specialist (Oberregierungsrat) Ernst Hoffmann. Hoffmann had seniority in Z Branch going back to 1919.³¹ A Specialist (Regierungsrat) in July 1937, he was promoted to his last grade in 1940.³² From 1940 he was head of the Communications Section (Referat fuer Funkwesen) in Z Branch, a section newly created at that time.³³ Nothing is known as to the fate of the section.

(4) Senior Specialist (Oberregierungsrat) Horst Hauthal. Hauthal was latterly head of the Cryptographic Section (Pers Z Chi) in Z Branch. His section remained in Berlin, and nothing is known as to its fate. A young man (born March 9, 1913), his rise in Z Branch was little short of meteoric when compared with the progress of his older colleagues. Joining Z Branch as a mathematician and cryptographer in January 1940, his promotion

²⁹ TF 24, Anlage 1, Pers Z 5617/41

³⁰ I 1, p 17

³¹ DF 17 T3273

³² TF 24, Anlage 1 to Pers Z 5617/41

³³ TF 24, Pers Z 647/40 refers to Hoffmann as head of the "newly created subsection for radio communications problems ("Leiter des neugeschaffenen Referats fuer Funkwesen"). Job descriptions and personnel specifications show that Pers Z F disposed of telephone, teletype and messenger services, as well as radio.

to Senior Specialist (Oberregierungsrat) was achieved in less than five years.³⁴

b. Pers Z S Personalities.

(1) Linguistic-Cryptanalytic Subsection.

(a) Senior Specialist (Oberregierungsrat) Rudolf Schauffler.

Although Schauffler was head of Pers Z S, it is not clear whether this title was more than nominal in 1945. The Pers Z S members listed him as head of a Subsection in 1945, while the 1937-1941 documents list him as head of the whole Section.³⁵ Latterly Paschke, a more forceful type and probably an abler administrator, appears to have usurped more and more of Schauffler's responsibilities.

Starting with Z Branch immediately after World War I, Schauffler had held the grade of Senior Specialist (Oberregierungsrat) since at least November 1, 1927, and was the senior cryptanalyst in the Section. In 1941 he had been recommended for the grade of Principal Foreign Office Specialist (Vortragender Legationsrat).³⁶

Originally a mathematician, his main field of interest was theoretical research (Grundlagenforschung). To this end, he edited a private periodical ("Schriften des Sonderdienstes") which was concerned primarily with cryptologic methodology.³⁷ His language specialties were Japanese, and Chinese, which Pers Z S cryptanalytic group he headed. He also served as an adviser to the Foreign Office Cryptographic Section (Pers Z Chi) on security. Either he or Senior Specialist (Oberregierungsrat) Hauthal of the Cryptographic Section (Pers Z Chi) represented the Foreign Office in the Army-Air-Naval Security Coordinating Conferences.³⁸

(b) Senior Specialist (Oberregierungsrat) Dr. Adolf Paschke.

While junior in grade to Schauffler, Dr. Paschke during the latter years of the war became, with Schauffler, the joint head of Pers Z S. His nominal title was that of head of the Linguistic-Cryptanalytic Subsection.

Joining the Foreign Office group in 1919, he became a Specialist (Regierungsrat) in 1927 and a Senior Specialist (Oberregierungsrat) between 1937 and 1940. In 1941 he was recommended to the rank of Principal Foreign Office Specialist (Vortragender Legationsrat).³⁹

³⁶TF 24, Anlage 1, Pers Z 5617/41

³⁷I 22, para 8

³⁸I 84, para 11

³⁹TF 24, Anlage 1, Pers Z 5617/41

Technically he was responsible for bookbuilders and translators, heading a subsection organized by countries and languages. He was also responsible for liaison with the armed forces. His language specialties were Italian, Greek and Russian, a group for which he assumed direct technical responsibility. A man of undoubted competence, possessing a strong personality and fierce energy, with good party connections, he probably had little difficulty in forging ahead of his more academically inclined colleagues.

(c) Technical Assistant (Willenschaftlicher Hilfsarbeiter) Karl Zastrow. From available information, Zastrow was the senior member of the Cryptanalytic Section, having entered service on December 1, 1918. A gifted analyst, he never advanced into the higher grades of officialdom. Pronouncedly absent-minded, it is doubtful if he were ever a capable administrator.

From available documents he appears to have headed the American and Scandinavian language group (Gruppe) under Dr. Paschke. However, by 1945 he was no longer head of this group, which was then directed by Dr. Hans-Kurt Mueller, with Zastrow as his deputy (Vertreter). He was the Pers Z S authority on American systems.⁴⁰

(d) Senior-Specialist (Oberregierungsrat) Wilhelm Brandes. Dr. Brandes headed the group which, under Dr. Paschke's direction, exploited systems of Dutch, Swiss, Belgian or French origin. Having served with Dr. Paschke in World War I, he came to work for the Foreign Office in 1920.⁴¹ He is listed as a Specialist (Regierungsrat) in October 1940, and was promoted to Senior Specialist (Oberregierungsrat) sometime between 1942 and 1945. A capable linguist and bookbuilder, he also had certain liaison functions for his own group. ✓

(e) Senior Specialist (Oberregierungsrat) Dr. Herrmann Scherschmidt. Scherschmidt is listed as having been with the Foreign Office in May 1919.⁴² Promoted to Specialist (Regierungsrat) in 1927, he became a Senior Specialist (Oberregierungsrat) sometime between 1941 and 1945. Specializing in Slavonic and Near Eastern languages, he headed the Pers Z S Turkish group from 1934 to 1939. Thereafter he took over the Slavonic group until September 1943.⁴³ Desiring to return to Turkish at that time, he encountered personal difficulties in his old group

⁴⁰ I 22 p 24

⁴¹ TF 24, Job Descriptions for 1938 Promotions (Begründungen)

⁴² DF 17 T3273

⁴³ I 63 p 2

and transferred to the Foreign Office Document Section (translations) until September 1944. He then reassumed his old post as head of the Turkish group (under Dr. Paschke), while Dr. Benzing, the previous head, shifted to Arabian and Iranian systems.

(f) Specialist (Regierungsrat) Dr. Hans-Heidrun Karstien. The exact date of Dr. Karstien's entry into Pers Z S is unknown, but it antedated the year 1930. In November 1937, he was an unclassified employee (Tarifangestellter) in Group X, then the highest pay grade. In November 1940, he was listed as a Specialist (Regierungsrat), a grade he held at war's end.

A specialist in Balkan languages (although he worked on Japanese and Chinese systems from 1930 till 1938), he worked under Dr. Paschke's direction, handling Bulgarian, Croatian, Polish, Slovakian and (Finnish?) work. When the Berlin group was split, in December 1943, Dr. Karstien was placed in charge of the party which went to Hirschberg. Proceeding to Burgscheidungen with his party when Hirschberg was threatened by the Russian advance, he was taken prisoner there in April 1945.

(g) Specialist (Regierungsrat) Dr. Johannes Benzing. Dr. Benzing joined Pers Z S on July 20, 1937. Born January 13, 1913, he was the youngest senior official (Beamter) in the Pers Z S Section. From available data, it seems clear that he was promoted to Specialist (Regierungsrat) sometime between 1941 and December 1943.⁴⁴

A specialist on Near Eastern languages, he originally worked on Turkish under Dr. Scherschmidt. He headed this section from October 1939 until September 1944, when Dr. Scherschmidt returned from another Section of the Foreign Office. He was then placed in charge of work on systems belonging to Iran, Iraq, and Afghanistan.⁴⁵

(h) Technical Assistant (Wissenschaftliche Hilfsarbeiterin) Dr. Ursula Hagen. As was indicated by Miss Friedrichs, it was difficult for women, no matter how able, to achieve proper recognition or seniority in Z Branch. Miss Hagen is a case in point. Born March 23, 1901, she entered Pers Z S on October 1, 1922. By 1939 (and through 1945) she was head of the group (under Dr. Paschke) which was responsible for work on England, Ireland, Spain, Portugal, and Latin American countries. In 1942 this

⁴⁴ TF 24, Anlage 1 to Pers Z 5617/41

⁴⁵ I 22, p 25

involved the supervision of twelve people.⁴⁶ Her grade and remuneration were never comparable to those of men with like seniority and similar responsibilities. She is last listed (February 1941) as a Technical Assistant (Wissenschaftliche Hilfsarbeiterin) Grade IV.⁴⁷ She was captured at Zschepplin in 1945, and evacuated to Marburg.

(i) Dr. Hans-Kurt Mueller. Little is known of Dr. Mueller's background or abilities. Born May 1, 1906, he went to work in Pers Z S on January 22, 1940. Specializing on American and Scandinavian systems, he is listed in December 1943 as Zastrow's deputy (Vertreter). By April 1945, due, no doubt, to superior administrative and organizational abilities, he is listed as the head of the group, with Zastrow as his deputy (Vertreter).⁴⁸ His last known pay grade was Technical Assistant (Wissenschaftlicher Hilfsarbeiter) Grade III.

(j) Dr. Peter Olbricht. Dr. Olbricht, a former anthropologist with the Ethnographic Museum in Berlin, went to work for Pers Z S in December 1939. An Orientalist of some repute, he specialized on Chinese, Japanese and Manchukuoan systems, working under the direction of Dr. Schauffler. He was in the Hirschberg group from December 1943, and was eventually captured at Burgscheidungen.

(k) Miss Asta Friedrichs. While holding a position with low rank and seniority, Miss Friedrichs was one of the leading personalities in Pers Z S. She joined Pers Z S in September 1939 after study at the Sorbonne and the American University in Sofia. She worked under Dr. Karstien, whose deputy (Vertreterin) she was, in the Slavonic group, specializing in Bulgarian.

(l) Miss Hildegard Schrader. Miss Schrader joined Pers Z S in September 1939, as a specialist in French. By 1943 she was deputy to Dr. Brandes in the French-Belgian-Swiss section. When Dr. Brandes fell ill in 1944, she took over the leadership of the group, which was then in Hirschberg. She was captured at Burgscheidungen. Like Miss Friedrichs and Miss Hagen, she apparently never advanced beyond the grade of Technical Assistant (Wissenschaftliche Hilfsarbeiterin) Grade IV.

(m) Dr. Otfried Deubner. Dr. Deubner started his work with Pers Z S on July 7, 1940. By the end of the war he was

⁴⁶ D 16, Report 4, p 6

⁴⁷ TF 24, 1941 personnel list

⁴⁸ I 22, p 25

assistant (Vertreter) to Dr. Paschke in the group which handled systems from the Vatican, Italy, Greece, and the USSR.⁴⁹ He was recommended for the grade of Specialist (Regierungsrat) in 1941 but apparently worked throughout the war as a Technical Assistant (Wissenschaftlicher Hilfsarbeiter) Grade III.

(2) Mathematical-Cryptanalytic Subsection.

(a) Senior Specialist (Oberregierungsrat) Dr. Werner Kunze. Like Paschke and Schauflier, Dr. Kunze was a cryptanalyst with 25 years of Pers Z S experience. A military cryptanalyst in World War I, he joined the Foreign Office in 1919.⁵⁰ The date of his promotion to Senior Specialist (Oberregierungsrat) is unknown, but it was previous to October 1, 1940.⁵¹

Kunze's Subsection, the Mathematical-Cryptanalytic Subsection, usually operated apart from the main Pers Z S party (Stammabteilung). Primarily a mathematician, Dr. Kunze's subsection consisted of linguist mathematicians and was also responsible for the Pers Z S I.B.M. machinery. They specialized in difficult systems, complex encipherments, and those problems which required a large expenditure of time and personnel, or the application of technical devices.⁵² In December 1939, the group included 20 persons and was housed apart from Schauflier's Linguistic-Cryptanalytic Subsection. In December 1943, the Subsection was evacuated to Silesia (Hermsdorf). It came to Zschepplin in March 1945, where it remained until war's end.

(b) Prof. Dr. Hans Rohrbach. A professor of mathematics at the Charles University in Prague, Dr. Rohrbach divided his time equally between his teaching duties and work as a cryptanalyst. He started his work with Pers Z S early in 1940. An undated personnel list of that year shows him as "provisionally employed" (Kommissarisch beschaefligt), with the assimilated grade of senior civil servant (hoeherer Beamter).⁵³ Possessing an excellent command of English, he had worked on English, American, and Scandinavian, as well as Japanese systems.⁵⁴ By personality rather than seniority, he was one of the Pers Z S leaders. He was awarded the War Service Cross 2d Class (KVK II) in September 1944, probably for his work in the solution of the U.S. Diplomatic Strip System O-2.

⁴⁹I 22, p 25

⁵⁰DF 17, T3273

⁵¹TF 24, Handwritten Personnel List, dated October 1, 1940

⁵²I 22, p 25

⁵³TF 24, Undated Personnel List

⁵⁴I 89 p 3

(c) Dr. habil. Helmut Grunsky. Born July 11, 1904, Dr. Grunsky went to work for Pers Z S in September 1939. Prior to that date, he had been teaching and doing mathematical research at the Prussian Academy of Sciences. He was a Technical Assistant Grade III (Wissenschaftlicher Hilfsarbeiter) in December 1940, and was recommended for promotion to Specialist (Regierungsrat) on March 5, 1941.⁵⁵ At that time he was listed as head of a "group" in the Subsection, a position he still held at the end of the war (Gruppenleiter, mathematischer Zweig).

(d) Dr. Hans Georg Krug. It is not known when Krug joined Pers Z S. It seems probable that he was one of the large group hired in early 1940. He is not listed on the Pers Z S personnel list of December 1, 1939, but his name is found among the 1941 recommendations for promotion, when he was recommended for the grade of Specialist (Regierungsrat). At war's end he was in charge of all the Pers Z S Hollerith installations.

(e) Dr. Erika Pannwitz. It is not known when Dr. Pannwitz joined Pers Z S. A mathematician, she was listed as the head of a group (Gruppenleiter) in April, 1945.⁵⁶

(f) Klaus Schultz. Schultz joined Pers Z S shortly after the outbreak of war. A professional mathematician and statistician, he worked for the German Statistical Office (Statistisches Reichsamt) before the war. He is listed as being with Dr. Kunze's subsection on December 1, 1939. His last known civil service grade is that of Technical Assistant Grade III (Wissenschaftlicher Hilfsarbeiter). It does not appear that his recommendation for promotion to Specialist (Regierungsrat) in 1941 was ever acted upon favorably. He is listed as the head of a group as early as March 5, 1941, and still held that post in April 1945.⁵⁷

(g) Dr. Annelise Huehnke. Mrs. Huehnke started work with Pers Z S on August 31, 1939. She is listed as the head of a group under Dr. Kunze on March 5, 1941. Never recommended for

⁵⁵ TF 24, Recommendation for 1941 Promotions

⁵⁶ TF 24, List of personnel submitted by Dr. Kunze April 1945.

⁵⁷ TF 24, Anlage 1 to Pers Z 5617/41, and List of Personnel submitted by Dr. Kunze, April 1945.

promotion outside the grade of Technical Assistant (Wissenschaftliche Hilfsarbeiterin), she apparently ended the war in grade III.

(h) Dr. Karl Schroeter. Dr. Schroeter joined Pers Z S in the spring of 1941. A former lecturer in mathematical theory at the University of Muenster, he worked independently on Japanese additive and encipherment systems. He is listed as the head of a group under Dr. Kunze in the spring of 1945.

(3) Personnel on Loan from Signal Intelligence Agency, Supreme Command of the Armed Forces (OKW/Chi).

(a) Dr. Arthur Grosse (born February 8, 1910), Edgar Hierer (born March 22, 1916) and Kurt Rave were members of the Signal Intelligence Agency, Supreme Command of the Armed Forces (Okw/Chi) who were loaned to Pers Z S in December 1943, after the Signal Intelligence Agency Supreme Command of the Armed Forces (OKW/Chi) had been bombed out of its Berlin quarters. They worked on Japanese and Chinese problems. According to Dr. Rohrbach, they were "definitely lower grade personnel, and had come to be trained."⁵⁸ There is some evidence that Rave and Hierer were actually military personnel.⁵⁹

(4) Missing Persons. Most of the key Pers Z S personnel were taken prisoner at Lachepplin or Burgscheidungen in April 1945. Dr. Scherschmidt was later located through P/W sources in a Heidelberg hospital. Other personnel, some of whom were known to have been with the organization in 1945, were never taken.

(a) Specialist (Regierungsrat) Dr.....Kasper. Dr. Kasper headed the Rumanian group in Dr. Paschke's Subsection. Listed as having been among the original May 1919 group, he became a Specialist (Regierungsrat) sometime prior to October 1, 1940.⁶⁰ When the Pers Z S Linguistic-Cryptanalytic Subsection was split in December 1943, he remained with the main body (Stammabteilung) in Berlin-Dahlem. He is not mentioned in the 1945 interrogations. It is not known whether he sought to elude capture by escape, or whether he was dead. His assistant (Vertreter), Wilhelm Menning, also not taken, was included in the Pers Z S personnel who went to Muehlhausen.

⁵⁸ I 22, para 50

⁵⁹ I 150, p 8

⁶⁰ TF 24, Personnel list of October 1, 1940

(b) Senior Specialist (Oberregierungsrat) Friedrich Niendorff. Niendorff, one of the original 1919 group, appears to have been the Pers Z S specialist on intelligence evaluation (Auswertung) and dissemination.⁶¹ During the interrogations no specific queries were raised concerning his activities. It is possible that Niendorff was no longer with Pers Z S in 1945. However, he or his successor might have been able to throw some light on the intelligence value of the Cryptanalytic Section's achievements, and it is to be regretted that no attempt was made to probe further into his activities.

(c) Prof. Dr....Horn. Under Dr. Paschke's direction, Dr. Horn was responsible for the Pers Z S files (Archiv).⁶² No specific information is available as to their scope, other than that they included personalities and place names from decodes, and were amplified from newspaper clippings. Dr. Horn was in the group which went to Muehlhausen, and was never taken prisoner.

⁶¹TF 24 Job Specifications for 1941 Promotions

⁶²I 22 p 25

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Chapter II. Intercept Control and Traffic Analysis

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8. Sources of Intercept Material. - -Pers Z S had one small intercept station under its own control, called the Landhaus, in Dahlem. This station was used to cover priority links, such as Berlin-Ankara and Berlin-Lisbon.⁶⁵ Pers Z S was dependent for the bulk of its intercept upon the Signal Intelligence Agency of the Supreme Command of the Armed Forces (OKW/Chi), Goering's "Research" Bureau (FA), and the German Postoffice.

Traffic taken by the intercept stations of the Signal Intelligence Agency of the Supreme Command of the Armed Forces (OKW/Chi) at Lauf, Loerrach and Treuenbrietzen was forwarded by teletype, probably via OKW. An examination of message photocopies in the TICOM files shows that a large amount of intercept traffic was in fact received from these stations, as well as OKW/Chi/VIb, the section in the Signal Intelligence Agency of the Supreme Command of the Armed Forces (OKW/Chi) which specialized in the interception of the press, propaganda and news agency transmissions. Dr. Paschke stated that Pers Z S may have had traffic from the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi) intercept stations in foreign countries, but since in most cases the traffic was recopied before it reached Pers Z S, there was no indication as to its origin.⁶⁶

Traffic was also received from Goering's "Research" Bureau (FA). The intercept stations are unknown. At one time the traffic, both radio and telegraph, transmitted by the German Postoffice was forwarded to Pers Z S through the "Research" Bureau (FA). After the "Research" Bureau (FA) was bombed out, this traffic was received direct from the Postoffice.⁶⁷

⁶⁵ I 22 Para 103

⁶⁶ I 22 Para 103

⁶⁷ I 22 Para 103

9. Intercept Control and Traffic Analysis.-- There was no mention of intercept control or traffic analysis in the interrogations or documents. There appears to have been an attempt to keep a check on traffic depths and the relative amount of garbled traffic.⁶⁸ In view of the fact that most of the Pers Z S intercept came from outside sources, and was taken on commercial and diplomatic links which used fixed frequencies and fixed call signs, it is doubtful if any serious efforts in traffic analysis would have been profitable.

⁶⁸T2038, Report on Polish Systems as of January 1, 1941, referred to a Polish consular system which was unworkable, partly due to the poor condition of the intercept forwarded by the "Research" Bureau (FA). T2252, Report of the Italian Group for the Year 1940, mentioned that the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi) intercept totals had increased markedly, and that many messages had been received which had not been taken by the "Research" Bureau (FA) intercept stations.

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Chapter III. Cryptanalysis

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10. General Pers Z S Organization for Cryptanalysis.---

As in many small organizations, the Pers Z S internal organization appears to have been established more in conformity with personal factors, than with any logical plan. In order properly to comprehend the section's organization for cryptanalysis, it is necessary first to understand the position of the three leaders within the organization.

From a professional point of view, Schauffler was the undoubted dean of the organization. Its head for twenty years, it seems probable (while never stated in so many words) that in the years just prior to 1945 he had less and less of the group's leadership. Dr. Paschke, wrapped in the mantle of his Italian successes, essentially a more forceful personality, and a party member, seems to have usurped (or been appointed to conduct) more and more of Schauffler's administrative functions. At no point, either in the interrogations or in the documents, is there a definite statement as to who was the constituted head of the organization in 1945. Perhaps there was none, but it seems probable that this role was played by Paschke while, in difference to Schauffler's seniority and prestige, no paper administrative changes were made. Kunze, the leading mathematical cryptanalyst of the group, appears only as the head of a subsection. With this equivocal situation as to leadership clearly in mind, it is possible to outline the Section's organization for cryptanalysis with some degree of understanding.

a. Mathematical and Linguistic Cryptanalysis. Chart 6-1, representing the Pers Z S organization as of April, 1945, is in most respects an ideal representation. In point of fact, there was in Pers Z S, in April 1945, very little which could be termed organization. There had not been ideal working conditions, with all elements of the Section located in the same building or same general area, since the evacuation of Berlin in November, 1943.

However, in spite of deviations from the sought-for norm or ideal, through all the vicissitudes of evacuation and re-evacuation, one cardinal organizational principle seems to have been retained: that mathematical cryptanalysis involving the initial solution of extremely difficult systems, the solution of complex encipherments and additives, and the application of machine techniques to these problems, should be kept separate from linguistic cryptanalysis, roughly defined as including current solution of known additive and enciphering systems, code-book reconstruction, translation and publication. This principle emerges clearly in Chart 6-1.⁷³ If Dr. Schauffler were placed in charge of a subsection enjoying primarily consultative and research functions, if Dr. Kunze were placed in charge of a subsection having mathematical-cryptanalytic activities, and if Dr. Paschke were placed in charge of linguistic-cryptanalytic activities, then a reasonably effective organization was possible.

b. Schauffler's Responsibilities. Schauffler's responsibilities, aside from some rather vague responsibilities as co-head of Pers Z S (with Paschke) embraced theoretical research on cryptanalytic methods and systems, publications, and consultation with the Cryptographic Section (Pers Z Chi) on the security of the Foreign Office code and cipher systems. His linguistic specialities were Japanese and Chinese, which linguistic group he headed, under Dr. Paschke.

⁷³I 22, Appendix B. No conclusions can be drawn as to the general administrative efficiency of this division. In at least one instance (see T56, Pages 8,22), there seem to be differences of opinion between the mathematicians and the linguists as to the proper approach to a problem.

c. Paschke's Linguistic-Cryptanalytic Subsection. This Subsection consisted of a number of small linguistic groups, organized along semi-linguistic or semi-geographical lines. The group organization appears to have been fluid, varying according to the intelligence and cryptanalytic priorities. In general, it was organized into the following groups, with group heads as listed:

- (1) Japan, China, Manchukuo.....Schauffler
- (2) United States of America.....Zastrow
- (3) France, Belgium, Switzerland, Holland.....Brandes
- (4) Italy, Greece, Vatican & USSR.....Paschke /
- (5) Turkey.....Scherschmidt
- (6) Iran, Afghanistan, Arabic States.....Benzing
- (7) Rumania.....Kasper
- (8) England and British Empire, Spain,
Portugal & Latin-American.....Hagen-
- (9) Bulgaria, Croatia, Poland, Jugoslavia
& Baltic States⁷⁴.....Karstien

Personal considerations seem to have played an important part in the organization of the work groups. For example, Scherschmidt was in charge of work on Turkish from 1934 until 1939, and the work on Polish systems from 1939 until March 1943. Dr. Benzing took over his responsibilities on Turkish systems when Scherschmidt transferred to Polish. When Scherschmidt returned to Pers Z S in September 1944, he reassumed responsibility for Turkish, while Benzing took over a newly created group which worked on Iran, Afghanistan and other Arabic language systems.⁷⁵ Scherschmidt had originally been in charge of work on Bulgarian systems, but Dr. Karstien kept control of this work, as well as the remainder of the Slavonic languages (defined as Jugoslavian, Croatian, Polish and the Baltic States).

⁷⁴I 22, Appendix A. Such was the fluidity of the organization after 1943 that no chart can properly show group heads and group organization for more than a short period. For example, Scherschmidt left Pers Z S from March 1943, until September 1944. Paschke headed the group which was responsible for Russian traffic, but, in point of fact, the traffic was never tackled. For these reasons, the listing given below will not correspond strictly to the organization given in Appendix A.

⁷⁵I 63, page 2; I 103 page 3

d. Kunze's Mathematical-Cryptanalytic Subsection. The internal organization of Dr. Kunze's Mathematical-Cryptanalytic Subsection has never been precisely defined. A captured document, dated January 18, 1941, listed six work groups, whose responsibilities were, respectively, England, America, Japanese Diplomatic, Japanese Military, Greece, and study of German systems(eigene Verfahren). The list of group heads submitted by Dr. Kunze in April 1945, also included six names. However, it is doubtful if the division of responsibility in this subsection had remained constant for four years. From available evidence, it seems more probable that Dr. Kunze's Subsection had a loose internal organization which permitted full concentration of needed personnel on the most important problems as they arose.⁷⁶

The Mathematical-Cryptanalytic Subsection had had its own IBM machinery since 1942. This machinery was used principally in solution of difficult additives and superencipherments, and not for bookbuilding purposes.

At the end of the war the installations included 20 punches, 10 sorters, 2 collators, 2 reproducers, 6 tabulators, one multiplier, and additional special machinery. The most useful special device was the so called "automaton", a rapid deciphering machine developed for use on the American Diplomatic Strip Cipher.⁷⁷ Another machine, a type of comparator (Spezialvergleichler), was developed to solve Japanese transposition ciphers by dragging the end of the message through the cipher text.⁷⁸

⁷⁶ Five of the six group heads alone had worked on the solution of the U. S. Diplomatic Strip System 0-2. See I 89, page 3

⁷⁷ I 89

⁷⁸ I 22, Para 147

(e) War-Induced Geographical and Organizational Changes.

In November, 1943, after the bombing of Berlin, the Pers Z S organization was split up into three groups. The main body (Stammabteilung Berlin-Dahlem), consisting of Schauffler, Paschke and most of the latter's Linguistic-Cryptanalytic Subsection, remained in Berlin. Dr. Karstien took a part of the Linguistic-Cryptanalytic Subsection to Hirschberg in the Riesengebirge. This group consisted of a part of Dr. Karstien's group (Bulgaria, Croatia and Poland, less Jugoslavia, which was left in Berlin under Schimmel), a Japanese-Chinese party under Dr. Olbricht, and Dr. Brandes' French language group (France, Belgium, Switzerland) under Miss Schrader, Dr. Brandes being ill at the time. This group engaged in code reconstruction, current solution of the more difficult additives and encipherments, and the translation of less urgent telegrams.⁷⁹ At the same time, Dr. Kunze's Mathematical-Cryptanalytic Subsection was moved to Hermsdorf in Silesia (Wilhelm Wander Schule). This organization, knit together by a daily courier service, remained unchanged until February 1945, when the various groups moved westward and southward to avoid the Russian advances.

11. General Summary of Cryptanalytic Successes.-- Considering the relatively small staff which Pers Z S had, the conclusion must be drawn that its cryptanalytic successes were considerable. Work was done on systems from approximately 50 countries. Of these 50 countries, apparently only three used diplomatic systems which completely defied successful cryptanalysis-- Russia, Czechoslovakia, and Poland after 1942-1943. It is easy to scorn the Pers Z S inability to solve high grade machine systems, whether American SIGABA, English Type X, or Swedish Hagelin. Yet, with their small staff, they were able to read the Swiss Enigma for a short period of time, and to solve the Japanese "Red" machine.

As a diplomatic cryptanalytic agency, the investigator is forced to conclude that in its primary field, the solution of foreign diplomatic codes, the agency evidenced an extraordinary degree of competence. With the exception of Russian, substantial segments of the medium grade code systems used by the major powers were read. England, the United States, France, Italy (where the greatest success was achieved), China, Japan-- many of their diplomatic codes and ciphers were read. With

⁷⁹ I 22, Appendix A

Turkey, Bulgaria, Belgium, Spain, Switzerland, Portugal and Poland (until 1942), nearly 100 per cent success was achieved. In the case of the Latin American countries, and the smaller European and Near-Eastern nations, complete success was apparently achievable, insofar as limitations of personnel and a relatively trivial message content might warrant. Had there been backing from von Ribbentrop, had there not been crippling jealousies at agency-head levels, there might have been even greater successes. For a more detailed consideration of the agency's cryptanalytic successes, see the breakdown by countries immediately following.

12. Detailed Listing of Cryptanalytic Successes by Countries.

a. Argentina. Due to shortages of personnel and intercept difficulties, it does not seem probable that Pers Z S expended much effort on Argentine diplomatic systems. At least three main codes were known, one of which, a five-figure, one-part, 110,000 group system, usually enciphered by the addition or subtraction of a constant, was read almost without gaps. Two-hundred forty messages were decoded and published in 1942.⁸⁰

b. Belgium. The Pers Z S cryptanalysts were familiar in 1945 with three readable Belgian codes. The main systems were four-figure, one-part or partially alphabetic codes, containing approximately 10,000 groups. They were usually enciphered with a daily changing unsystematic bigram substitution table. Three-hundred-seventy-three messages were published in 1942, a small proportion of the total intercepted and broken.⁸¹

c. Brazil. Prior to 1943, insofar as limitations of traffic depth and personnel permitted, the Pers Z S cryptanalysts seem to have read nearly all major Brazilian diplomatic codes. Three systems in particular seem to have been read almost without gaps: a five-figure, one-part, 165,000 group code (called "Bras. B1" by the Germans); a five-letter, partially alphabetic, 82,000 group code (called "Bras. B2"); and a five-figure, one-part, 100,000 group system (called "Bras. Z 1"). The basic book for "Bras. B2" was available in photostatic form. Traffic totals fell off sharply after the rupture of diplomatic relations in January, 1942, and it was not indicated whether the earlier successes were continued.⁸²

⁸⁰ I 172, para 17; D 16, Report # 4, Page 4

⁸¹ I 22, paras 156-159, D 54, Report # 8 Page 19

⁸² D 16 Report # 2 and Report # 4

d. Bulgaria. Bulgaria used two basic five-figure, 35,000-40,000 group code books. Both were one-part codes, repaginated for various links, usually used enciphered. Goering's "Research" Bureau (FA) had provided photocopies of the two books.⁸³ Senior Specialist (Oberregierungsrat) Scherschmidt stated that, from 1943, all major Bulgarian links were read.⁸⁴

e. Canada (See United Kingdom)

f. Chile. Little information is available on successes with Chilean systems after 1942. The one-part, two/three/four-letter, 42,000 group code known as "Clave Solar" (Chilean name) was read at least until late 1942, and possibly until the end of the war.⁸⁵

g. China. There is little direct information relative to Pers Z S successes with Chinese systems. The Chinese four-letter and four-figure codes were apparently read until 1930. Few details are available on the work done from 1930 until 1938. At that point, work was stopped, only to be taken up again early in 1941.

Interrogations showed that two three-letter codes, one military, and the other an attache system, were solved. Another three-letter system called "uti" was read in 1941-1942.⁸⁶ Documents, on the other hand, suggest a somewhat more extensive success. From available evidence, however, this cannot be verified.⁸⁷

h. Czechoslovakia. It seems probable that Pers Z S did not work on Czech diplomatic systems. According to Dr. Karstien, the systems used were one-time pads and unbreakable.⁸⁸

⁸³ T2038, Film 8, Report of the Polish-Bulgarian Group, August 13, 1941

⁸⁴ I 103, Para 3

⁸⁵ D16, Report # 4, Page 5. Miss Hagen, when interrogated in September, 1945, did not mention that the code had become unreadable. I 172, Para 16

⁸⁶ I 22, Paras. 59, 60, 180

⁸⁷ There is some evidence that all the Pers Z S work was not mentioned. The three systems mentioned in the text were unknown at ASA. However an examination of documents T197, 427, 1169, 1170, and 1172 suggests that there was some success in bookbreaking with HNM (Chinese name) a major diplomatic code.

⁸⁸ I 22, Para 71

i. Eire (Ireland). Considerable work was done on the Irish diplomatic links to Berlin. The Irish used the British Government Telegraph Code (GTC called "B-22" by the Germans), enciphered by the use of substitution alphabets. This code, a five-letter, one-part, 84,000 group system, had been captured at Bergen in 1940.⁸⁹

j. England (See United Kingdom).

k. France. The Pers Z S success in solution of French diplomatic transmissions was considerable. Dr. Brandes stated in his 1941 report that approximately 75 per cent of French diplomatic transmissions were read.⁹⁰ Most diplomatic systems were four-figure, two-part codes, enciphered either through an additive system, or by bigram substitution tables. Many were compromised in 1940, and later, when they were deposited with the German Armistice Commission at Wiesbaden.

l. Great Britain (See United Kingdom).

m. Greece. According to Dr. Deubner, there were three main Greek diplomatic systems, all of which were read: an unenciphered five-letter code book (fifth letter for inflection only), carrying most of the traffic; an unenciphered four letter book, used mainly for traffic with Berne; and a four-figure book, used with bigram substitution, for traffic on the Moscow, Washington, Cairo and Ankara links.⁹¹

n. Holland (Netherlands). Little information is available relative to the Pers Z S work on Dutch systems. A 1939 report listed work on a four-letter, one-part code, and a figure code convertible to a letter basic book.⁹²

o. Hungary. It is not known whether Pers Z S ever worked on Hungarian codes. In April, 1940, Dr. Paschke reported that he had discussed cooperation on Hungarian systems with Fenner and Seifert of the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi). He recommended that Pers Z S attack the five-figure code designated as "U-3".⁹³

⁸⁹I 172, Para 11, and D 16, Reports #3 and #4

⁹⁰D 54, Report # 5, Page 13

⁹¹I 22, Para 169. The reports from the Lehmann Group (Gruppe Lehmann) for 1939-1941 do not list such impressive successes, although they imply that shortages of personnel were a strong contributing factor. See T2052.

⁹²T2050, Report on Dutch Systems, dated November 29, 1939

⁹³T2043, Report of the Group Austria-Hungary, dated April, 1940

p. Iran (Persia). Dr. Benzling stated that all the Iranian systems were read. The Iranians used three-letter, 12,000 - 13,000 group, one-part or reverse-alphabetic, enciphered code books.⁹⁴

q. Italy. Work on Italian diplomatic codes was an outstanding Pers Z S achievement. From 1935 until late 1942, with lapses as new code books were introduced, Pers Z S apparently read all major Italian diplomatic codes. The 1940 reports from the Italian Group listed twelve codes, enciphered or unenciphered, all of which were read.⁹⁵ The work became increasingly difficult in 1942-1943, for the Italians introduced bigram substitution over the additive on the basic code books, "If the basic books had been changed, the traffic would have been impossible to read".⁹⁶ Some systems were read after the collapse in 1943. Mention was made of a Badoglio double transposition system which was never solved.⁹⁷ Dr. Paschke mentioned three Neo-Fascist systems which were read in the latter stages of the war.⁹⁸

r. Japan. Pers Z S read the lower grade Japanese systems until 1934. After 1934 the Japanese went over increasingly to the use of a machine, ("JB-48", or the "Red" machine). This machine was solved in September 1938, and read currently until February, 1939, when the traffic became unreadable (the Germans failed to realize that a new machine, the "Purple" machine, had been introduced).⁹⁹ A major diplomatic code (known to the Germans as "JB-57") was solved at the end of 1941 and read currently for about two years. This was a two-four letter book, enciphered by a series of alphabets and/or stencil transposition with nulls.¹⁰⁰ Some success was also achieved with other diplomatic systems, particularly "JB 64" (US JBA), a two/three letter code.

⁹⁴I 22, Para 166, and T2052, Report of the Lehmann Group, dated February 19, 1942

⁹⁵T2252, Report of the Italian Group for the Year 1940

⁹⁶I 22, Para 25

⁹⁷I 22, Para 168

⁹⁸I 22, Para 25

⁹⁹I 22, Para 19

¹⁰⁰I 22, Para 176

s. Jugoslavia. Neither interrogations nor captured documents shed much light on the Pers Z S work with Yugoslav systems. It is only known that some work was done on these systems after 1940-1941.¹⁰¹

t. Manchuria. Manchukuoan systems were handled by the group which worked on Japanese and Chinese systems. Little data is available on successes. A three-letter, Japanese-language code book, enciphered with a fifteen-place transposition was read. Shortages of personnel were always a limiting factor.¹⁰²

u. Mexico. No information is available as to successes with Mexican systems after 1942. The principal codes, "Pomos", a one-part, five-letter code, and "Xepit", a similiar system, both enciphered by substitution alphabets, were read through 1942. The "Xepit" book was compromised in November, 1942, although it had been broken prior to compromise.¹⁰³

v. Poland. Relatively little progress was made in solution after 1942. Dr. Karstien stated that Polish codes "were unbreakable in practice- there were too many of them, they required too much work".¹⁰⁴ The principal Polish diplomatic code (called "PD-1" by the Germans), an enciphered four-figure, two-part code, was broken in 1940 and read 100 per cent until October, 1942, when it went out of use.¹⁰⁵

w. Portugal. A five-figure, partially alphabetic, 50,000 group book (called "302" by the Germans) was read with some success in 1941. Two other five-figure, partially alphabetic, 61,500 group books were compromised in December, 1942, when a basic book (called "205") was received from the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi). After that time the traffic was read 100 per cent. The work done in the 1942-1945 period does not seem to have been covered in the interrogations.¹⁰⁶

¹⁰¹T2038, Report on Jugoslavia at the beginning of the year 1941

¹⁰²T76, Report of the Manchurian Group at the beginning of 1941

¹⁰³D16, Report #4, Page 5

¹⁰⁴I 22, Para 72

¹⁰⁵I 63, Para 5, 6

¹⁰⁶D16, Reports #1, #2, #3, #4

x. Rumania. The Pers Z S work on Rumanian systems was not explored in the interrogations. Dr. Kasper and Menning, the head and deputy of the Rumanian group, respectively, were not captured. A one page report, signed by Kasper and dated 1940, listed seven known diplomatic systems (called "R11-R17" by the Germans), all five-figure codes, varying from 70,000 to 100,000 groups, and enciphered by means of ten-place substitution tables.¹⁰⁷ No statement was made as to successes in solution, but captured code book reconstructions indicate an approximate 5 to 10 per cent recovery on book groups.

y. Russia. Work on Russian diplomatic systems does not seem to have been a Pers Z S commitment. Dr. Kunze made it clear that Russian systems had been read up until 1927, but that no success had been achieved after that time. Presumptively he had reference to the introduction of one-time pads. Lt. Colonel Mettig of Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi) stated that "after a certain date" (which he could not remember), no Russian diplomatic traffic was attempted, either by his agency or Pers Z S.¹⁰⁸

z. Scandinavia (Denmark, Norway, Sweden). Dr. Mueller, the nominal head of the Pers Z S Scandinavian group, stated that he had worked on Scandinavian systems for about three months in 1941. After that, all the work was transferred to the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi).¹⁰⁹ On the other hand, Dr. Rohrbach stated he had investigated traffic thought to be Swedish Hagelin for three months in 1941, and again in August, 1944. There is no contradiction between the two statements, since Dr. Rohrbach worked in the Mathematical-Cryptanalytic Subsection and Dr. Mueller was in Dr. Paschke's Linguistic-Cryptanalytic Subsection.¹¹⁰

¹⁰⁷ D 54, T2050, Page 5 1940 Report of the Rumanian group

¹⁰⁸ I 22, Para 16; I 96, Page 14

¹⁰⁹ I 22, Para 182

¹¹⁰ I 22, Para 48

- aa. South Africa (See United Kingdom).
- ab. Spain. Apparently little work was done on Spanish systems. In 1941 and 1942, the only years for which reports are available, work was done only on "04" (German name), a four-figure, partly alphabetic, 10,000 group code book. The book was partially recovered.¹¹¹
- ac. Switzerland. Generally speaking, all Swiss diplomatic systems were read except the Enigma cipher machine. That, too, was read for a time in 1941. The codes were chiefly three-letter books, usually bi-lingual, enciphered with a series of substitution tables. New wirings of the Enigma were solved by cribs every three months. Subsequent messages were recovered from message texts.¹¹²
- ad. Thai (Siam). According to the 1941 and 1942 reports issued by Miss Hagen's group, the main Thailand Code was a one-part, five-figure, 110,000 group English language code, used both enciphered and unenciphered. It was read almost without gaps.¹¹³
- ae. Turkey. Pers Z S started work on Turkish systems after the Montreux Conference in 1934. Most Turkish diplomatic traffic was read. Three codes were usually in use, changing at monthly intervals. In 1944-1945 the codes were chiefly one-part, with a cyclic additive, and were readily broken.¹¹⁴
- af. United Kingdom (British Empire). The principal Pers Z S successes with Empire and British diplomatic systems were obtained on medium grade letter codes. The Government Telegraph Code (GTC- called "B22" by the Germans), used in communication with Canada, Australia (and also by Eire), and another Government Telegraph Code ("B23"), used solely for South African communications, were read. These were five-letter, one-part, 84,000 group codes, usually unenciphered.

¹¹¹ D16, Report #4, Page 4. "04" was the Spanish name also.

¹¹² I 22, Para 160, and D 54, Report # 8, Page 18

¹¹³ D 16, Report # 3, Page 2

¹¹⁴ I 22, Para 165; I 63

The former had been completely compromised at Bergen in 1940. The four-letter, two-part codes (called "B25", "B30" and "B31" by the Germans) had a more significant message content. "B25" and "B31" (the Foreign Office "R" Codes?) were considered most important by the Germans. The five-figure Interdepartmental Cipher, also compromised at Bergen, was worked on in 1941 and 1942, the bulk of the work being done by Goering's "Research" Bureau (FA).¹¹⁵

ag. United States of America. The Germans considered their main successes with American systems to have included the solution of the Grey Code (called "B3" by the Germans), the Brown Code ("B8"), and the State Department strip systems. The Grey Code had been in use since June 1918, and the Brown Code since 1938. Both systems were readable, the Brown Code having been compromised in 1941. The Strip System 0-1 was partially read in 1941, and the Strip System 0-2 was solved early in 1943.¹¹⁶ The strip systems mentioned were not read currently, but only after a delay of months.

ah. Vatican. The 1940 Report of the Italian Group (Paschke) made it clear that while approximately 50 per cent of the Vatican traffic could be read, the traffic was not a major Pers Z S commitment. Reference was made to a one-part, three-letter code, enciphered by a transposition within the groups, and to a one-part figure code, enciphered by means of substitution alphabets and a sliding strip. Most of the book groups were secured from Goering's "Research" Bureau (FA).¹¹⁷

¹¹⁵ D16, Reports #2, #3, #4; I 22, Paras 91-100; I 172 complete

¹¹⁶ I 22, Para 24; DF 15, Reports of the A Group 1919-1942

¹¹⁷ T2252, Report of the Italian Group for the year 1940

ai. Yugoslavia (See Yugoslavia).

aj. Latin America- Smaller States. Such was the security level of the systems used by the smaller Latin American states that only limitations of content, intercept and personnel prevented solution. Security levels varied from plain language (Nicaragua and Panama), to polyalphabetic substitution ciphers (Colombia and Venezuela), to enciphered codes (Bolivia and Peru). It does not appear from the 1941 and 1942 reports of Miss Hagen's group that the main Peruvian code was ever read, although lack of traffic depth and personnel shortages were important limiting factors. In 1941 a five-figure, 78,000 group Bolivian code, enciphered with a letter substitution table, could be read with some gaps.118

ak. Near Eastern Countries (excluding Iran and Turkey). Little work was done on systems originating in Afghanistan, Egypt, Iraq or Saudi Arabia. As was the case with the small Latin American states, traffic was usually inconsequential in content, lacking in depth, and there was never sufficient personnel to permit exploitation. Some work seems to have been done on Afghanistan, Abyssinia and Iraq.119 The available personnel were almost invariably employed on Turkish and Iranian systems.120

al. Baltic States. There are no details on Pers Z S work with Finnish systems. Some work had apparently been done on Lettish and Lithuanian systems before these countries were incorporated into the USSR. Dr. Karstien stated that most Lettish and Lithuanian systems were transposition ciphers, singly or doubly enciphered, sometimes enciphered with a Vigenere substitution.121

118 D16, Reports #2, #3, #4

119 See work sheets and reconstructions in T1062, T1067, T1074, T1068, T1077

120 I 22, Para 164

121 I 22, Para 74

VOLUME 6

Chapter IV. Liaison and Collaboration with Other
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13. Introduction.--

"Liaison with other German cryptographic units was bad... . The Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi) and Goering's "Research" Bureau (FA) also worked on diplomatic systems and the relations of all three stations were marked by jealousy rather than by cooperation".¹²⁶

"There was... no overall coordination of policy for the various German cryptographic bureaus."¹²⁷

126

I 22, Introduction

127

I 143, Para 51

Statements of this nature abound in the TICOM material. They imply a gross amount of duplication, strong personal jealousies, and occasional downright inefficiency. However, in many cases they do not represent informed opinion, and should therefore be treated with reserve. From the interrogations and the scanty documentary evidence available, it seems clear that the Pers Z S relationships with other cryptanalytic and cryptographic agencies do not lend themselves to generalization.

The amount of collaboration varied markedly from agency to agency. There is no mention of cooperation with the Army High Command (either with In 7/VI or OKH/LNA) after 1941-1942. Senior Specialist (Oberregierungsrat) Tranow of the Signal Intelligence Agency of the Naval High Command (OKM/4 SKL/III) apparently knew Dr. Schäufler. There was some personal antipathy between Senior Specialist (Oberregierungsrat) Voegele, the principal cryptanalyst in the Signal Intelligence Agency of the Air Force High Command (Chi Stelle, OBdL), and Dr. Kunze of Pers Z S. These agencies, however, had primary cryptanalytic interests of a military nature.

Liaison with Goering's "Research" Bureau (FA) appears to have been extensive. Intercept material was received from the "Research" Bureau (FA), and there was frequent cryptanalytic collaboration, including exchanges of recovered book groups and additives.

The collaboration with the Signal Intelligence Agency, Supreme Command of the Armed Forces (OKW/Chi), at least at lower administrative and technical levels, appears to have been the most extensive of all. Work was divided on various systems, personnel were exchanged on at least two occasions, and there is some evidence that elements of the Signal Intelligence Agency of the Supreme Command Armed Forces were actually housed with Pers Z S from November, 1943, until March, 1945. If collaboration with the Signal Intelligence Agency of the Supreme Command Armed Forces appears to have been good on cryptanalytic matters, the reverse was apparently the case where cryptographic matters and Foreign Office codes and ciphers were at stake. Dr. Huettenhain, chief cryptanalyst

of the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi) stated that:

"OKW/Chi was never allowed to know the details of the ciphers used by the Foreign Office... . Even toward the end, when there was a further attempt to centralize security under OKW/Chi, the Foreign Office would not come into line. Selchow (Chief of Z Branch) strongly opposed it, preferring to remain independent".¹²⁸

A detailed account of liaison activities follows.

14. Liaison with the Signal Intelligence Agency of the Army High Command (OKH/GdNA).-- As pointed out in the Introduction, there was little in the way of cooperation between Pers Z S and the Signal Intelligence Agency of the Army High Command and its predecessors. Dr. Otto Buggisch, formerly of the Army High Command Inspectorate 7/VI (In 7/VI), a pre-1944 agency, gives the only available information. Dr. Buggisch, worked in the French language group in the Army High Command Signal Intelligence Agency's Inspectorate 7/VI (In 7/VI) from November, 1941, until August, 1942. During this period he collaborated with Dr. Kunze of Pers Z S on a five figure DeGaulle code. He also worked with Dr. Kunze on the Swiss Enigma problem.¹²⁹ General Jodl, Chief of the Armed Forces Operations Staff, stated that he did not receive the Foreign Office decodes. However, he knew in a general way of the Pers Z S commitment and successes.¹³⁰

This general lack of collaboration between Pers Z S and the Signal Intelligence Agency of the Army High Command (OKH/GdNA) does not, however, point to any lack of coordination on higher administrative levels, nor to jealousy and lack of cooperation between the two agencies. They had essentially two distinct and separate missions, one military and the other diplomatic. There was therefore little or no need for a detailed collaboration.

¹²⁸ I 31, Page 15

¹²⁹ I 58, Pages 5, 6

¹³⁰ I 143, Page 5

15. Liaison with the Signal Intelligence Agency of the Naval High Command (OKM/4 SKL/III).-- Like the Army, the Navy had little occasion to work with Pers Z S. Their respective problems and commitments were basically dissimilar. Admiral Doenitz perhaps best summarized the situation when he said that he:

"had no knowledge of the cryptanalytic bureaus maintained by the other services... As for civil bureaus, he had never tried to find out, they were of no use to him."¹³¹

Senior Specialist (Oberregierungsrat) Tranow of the Signal Intelligence Agency of the Naval High Command (OKM 4/SKL/III) knew Schauffler of Pers Z S slightly. Schauffler had once given him some Japanese traffic for examination, but Tranow had never had time to study it.¹³² Miss Hagen reported in 1942 that the English group had sent their results on British codes "B30" and "B31" to the naval agency, but had received nothing in return.¹³³ Uncooperative the Navy may have been, but the Pers Z S cryptanalysts were apt to be unaware of message content in terms of intelligence. The possibility that the "B30" and "B31" messages might have been of no interest to Naval intelligence apparently did not occur to Miss Hagen.

16. Relationships with the Signal Intelligence Agency of the Commander-in-Chief of the Air Force (Chi Stelle, OBdL).-- Like the Army and the Navy, the Air Force was primarily interested in messages emanating from its allied counterparts. Diplomatic traffic would probably have lain outside its scope of interest. There are, however, two examples of Pers Z S-Air Force collaboration in the signal intelligence field.

The first dates back to 1939. According to Dr. Schauffler, Dr. Kunze of Pers Z S was approached at that time by the "Luftwaffe" for assistance with British weather ciphers.¹³⁴ Nothing is known as to the extent or the success of the ensuing collaboration.

¹³¹I 143, Para 26

¹³²I 147, Page 2

¹³³I 172, Para 14

¹³⁴I 22, Para 22. It is assumed that Schauffler meant the Commander-in-Chief of the Air Force (OBdL), rather than the "Research" Bureau (FA) in the Air Ministry.

The second instance of collaboration was noted by Dr. Huettenhain of the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi). His letter of July 27, 1943, speaks for itself.¹³⁵

"Three weeks ago a discussion was held in the Foreign Office between Oberregierungsrat Dr. Kunze (of Pers Z S), Regierungsrat Dr. Voegele (chief Air Force cryptanalyst)... . Voegele declared his willingness to cooperate on the "AM10" (German name for a U. S. Strip System) and Dr. Kunze undertook to provide the necessary material.

"Voegele was held off for a fortnight. When he pressed for the production of the promised material, Dr. Kunze stated that he had changed his mind and would not provide the material, as Dr. Voegele had made disparaging remarks about his work... .

"Suggestion: LIV (unknown) or the head of OKW/Chi should arrange with Paschke for the already planned collaboration of Pers Z S with Chi Stelle OBdL actually to come into force. Should Pers Z S not consent, Chi will terminate the agreement with Pers Z S to get a free hand, so that Chi can collaborate with Air... ."

This incident is not mentioned in either the Pers Z S or the Voegele interrogations. It does suggest that the spirit of cooperation between Pers Z S and the Signal Intelligence Agency of the Commander-in-Chief of the Air Force (Chi Stelle, OBdL) was not all that it might have been.

¹³⁵D 60, Page 5 It must be remembered that Pers Z S had solved the U. S. Diplomatic Strip System O-2, and that the Air Force was interested in similiar systems (such as CENEB) used by the USAAF and not in "O-2" itself.

17. Relationships with Goering's "Research" Bureau (FA).--

"Captain Oschmann...mentioned an utterance by his chief, Korvettenkapitaen Patzig, to the effect that all cryptanalytic connections with the Forschungsamt should be dropped, since cryptanalytic work did not belong in the province of the Forschungsamt."¹³⁶

This unsigned letter, dated February 23, 1934, was probably written by Dr. Paschke. It was found in a file which dealt with Pers Z S-Reichswehr collaboration. It probably does not represent the then prevailing Pers Z S attitude, but it does constitute the first reference in the Pers Z S material to this new "third competitor", Goering's "Research" Bureau (the Forschungsamt, abbreviated FA).

The later material bearing on Pers Z S-"Research" Bureau relationships is fragmentary. It consists of scattered references in Pers Z S cryptanalytic reports, none later than 1942, and the interrogations made in 1945.

Goering is author for the statement that "the Foreign Office had continuously tried to interfere" (with the "Research" Bureau)¹³⁷ No dates are given and his statement may have been motivated by his antipathy to von Ribbentrop. He also said that "both agencies covered precisely the same field, and there was unfortunately almost complete duplication".¹³⁸ Dr. Paschke's statement that, in general, "there was less liaison with the "Research" Bureau than with the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi)" seems to be the best summary.¹³⁹

¹³⁶ DF 17, T3273, Letters on Proposed Foreign Office Defense Collaboration.

¹³⁷ I 143, Para 59

¹³⁸ I 143, Para 49

¹³⁹ I 22, Para 101

Pers Z S received a certain amount of its intercept from the "Research" Bureau. The names and locations of the intercept stations were unknown. Until November, 1943, when the "Research" Bureau was bombed out, it acted as the forwarding agency for traffic intercepted by the German Postoffice, both radio and cable-telegram traffic. Thereafter the Postoffice forwarded intercept material to Pers Z S direct.¹⁴⁰

There is little evidence bearing on an official liaison. Seifert of the "Research" Bureau is author for the statement that intelligence produced by the "Research" Bureau was distributed to "all departments, including the Foreign Office... . At some of these departments we had liaison officers".¹⁴¹ In another interrogation a Dr. Gerstmeier is mentioned as the "Research" Bureau-Foreign Office Liaison Officer (Verbindungsmann).¹⁴² Sauerbier of the "Research" Bureau stated that "liaison with the Foreign Office...was handled by a single representative, and never involved any exchange of visits by operations personnel".¹⁴³ Unfortunately, the interrogations do not state whether this liaison was cryptanalytic-technical, or of an intelligence dissemination nature. The latter assumption seems more probable. There is no statement as to whether Pers Z S itself was ever a direct beneficiary of this liaison.

From the Pers Z S side there is excellent, albeit scattered evidence that there was a technical liaison of sorts. Both the "Research" Bureau and Pers Z S were invited to attend as guests at the meetings of the unofficial Army-Air-Naval coordinating committee.¹⁴⁴ Dr. Paschke of Pers Z S evidently

¹⁴⁰I 22, Para 103

¹⁴¹I 25, Page 2

¹⁴²I 54, Page 4

¹⁴³I 162, Page 4

¹⁴⁴I 84, Para 11

knew Ministerial Director (Ministerialdirigent) Schroder of the "Research" Bureau. Senior Specialist (Oberregierungsrat) Brandes, head of the French language group in Dr. Paschke's Pers Z S Subsection, reported in 1940 that he was responsible for his group's liaison with the "Research" Bureau.¹⁴⁵ Goering's statement about "very close liaison with Pers Z S to avoid unnecessary duplication" takes on additional credibility when the information on technical liaison is examined in detail (See Sub. Para. a. following).

Out of this sketchy evidence, several very tentative conclusions may be formed for the period 1940-1942:

- a. There was extensive duplication of effort between Pers Z S and Goering's "Research" Bureau (FA).
- b. There was some sort of official liaison between Goering's "Research" Bureau and the "Foreign Office", exact nature and extent unknown.
- c. On the technical level, there was apparently a fair amount of liaison. Where both agencies were working on the same problem, there was some exchange of information. Where solution was achieved, there were frequent exchanges of keys.
- d. It is not known whether the situation outlined in Paras a-c above still held at the end of the war.

Detailed Listing of Pers Z S-FA Collaboration by Countries:

(1) Bulgaria.

A 1940 report from the Pers Z S Bulgarian Group stated that Goering's "Research" Bureau (FA) had furnished them with photocopies of two Bulgarian codes.¹⁴⁶

¹⁴⁵ D 54, Report #5, Page 13. While Dr. Brandes had over twenty years of seniority in Pers Z S, it does not seem that his standing in the agency was sufficient to permit him to engage in liaison of the non-technical, policy-formational type.

¹⁴⁶ T 2038, Report on Bulgaria, January 1, 1940.

(2) England and the British Empire.(a) The Interdepartmental Cipher, a Five-Figure System.

Miss Hagen, head of the Pers Z S English Group, has stated that "there was no liaison with the "Research" Bureau (FA) except on the subject of the Interdepartmental Ciphers." Pers Z S did not work on this cipher after the summer of 1942, but received sections of the additive sequences from the "Research" Bureau (FA).¹⁴⁷

(b) Code B30

"In February, 1942, at the request of Senior Specialist (ORR) Waechter of the "Research" Bureau (FA), an attempt was made to establish contact with the "Research" Bureau (FA), which, did not get beyond a general exchange of ideas. The only concrete results were that the "Research" Bureau (FA) placed at our disposal a list of approximately 50 "B30" recovered groups."¹⁴⁸

(c) Code B22

This code, called the Government Telegraph Code, was used by the Irish Government for diplomatic communications, with an encipherment by substitution alphabets. The "Research" Bureau (FA) solved the keys used on the Berlin and Madrid links in 1943. Pers Z S took over the keys from the "Research" Bureau in 1944.¹⁴⁹

(3) France(a) Code 19

Mention was made of the Pers Z S work in 1941 on a 10,000 group figure code designated as "19". The first solution was achieved by the "Research" Bureau, using captured tables, which were later turned over to Pers Z S.¹⁵⁰

¹⁴⁷ I 172, Para 13, 14; D16, Reports #3 and #4

¹⁴⁸ D16, Report #4, Page 1

¹⁴⁹ I 172, Para 11

¹⁵⁰ D54, Report #8, Page 18

(4) Italy.

There was a fairly extensive Pers Z S "Research" Bureau (FA) cooperation, on Italian systems, at least through 1940. The "Research" Bureau intercept was made available to Pers Z S.¹⁵¹ From April, 1939, through 1940 there was a regular exchange of encipherment tables. In September, 1940, and in November, 1940, there was a mutual exchange of book groups on two codes, namely "AR 38" and "RA 1".¹⁵²

(5) Poland.

Two 1941 documents indicate that Pers Z S was receiving Polish intercept from the "Research" Bureau at that time, and that both were working on a secondary consular system, unnamed.¹⁵³

(6) Scandinavia.

Dr. Mueller of Pers Z S stated that he "had some unofficial liaison with the people in the "Research" Bureau who were working on Scandinavian", but specifies no dates for this collaboration.¹⁵⁴

(7) Spain.

The 1942 Pers Z S report from the Spanish Group mentioned several Spanish systems on which no work was done and added that "the "Research" Bureau held the opinion that machines were employed."¹⁵⁵

(8) Switzerland.(a) Swiss Enigma

In his 1941 report Dr. Brandes mentions solution of the Swiss Enigma. Apparently the "Research" Bureau furnished Pers Z S with a partial solution, which Dr. Kunze was able to complete. Thereafter there was an exchange of keys between the two agencies.¹⁵⁶

151

T 2252, Annual Report of the Italian Group for 1940.

152

Ibid

153

T 2038, Situation Report of the Polish Group, January 1, 1941

154

I 22, Para 182

155

Ibid, Page 4

156

D54, Report # 8, Page 18

(b) Three-Letter Code.

The same report mentions a 2304 group, three-letter code in the same report. These tables were first solved by the "Research" Bureau, and later by Pers Z S.¹⁵⁷

(9) Thailand.

At the beginning of 1942 the Thailand Code was turned over to the "Research" Bureau for copying.¹⁵⁸

(10) Vatican.

While Pers Z S did some work on Vatican systems, the 1940 report indicates that most of the idents on Vatican systems were received from the "Research" Bureau.¹⁵⁹ Code values were exchanged in 1939 on an unidentified Vatican system.¹⁶⁰

18. Liaison with the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi).--

a. Cryptographic Cooperation.

"Since the Army, with its military attachés, is dependent for transmission of its reports upon the cipher systems of the Foreign Office, it has a departmental interest in the security of diplomatic systems. It was suggested that close cooperation would be in the mutual interest... regarding breaches of security in the handling of ciphers."¹⁶¹

This statement, dated February 12, 1934, was taken from Dr. Paschke's notes. It documents the first known example of Pers Z-military cooperation looking toward an improved cipher security. It is not known whether the intent and doctrine stated here ever advanced beyond the discussion stage.

¹⁵⁷ Ibid

¹⁵⁸ D16, Report # 4, Page 3

¹⁵⁹ T2252, Annual Report of the Italian Group for 1940

¹⁶⁰ T 93

¹⁶¹ DF 17, T3273, Page 3

The 1944-1945 picture shows strong Foreign Office (Pers Z) intransigence in the matter of the Signal Intelligence Agency of the Supreme Command Armed Forces' (OKW/Chi) attempt to act as the senior German agency on all matters pertaining to security, and code and cipher compilation. In October, 1943, the Supreme Command of the German Armed Forces promulgated an order under which no code or cipher was to be employed in Germany without the prior consent of the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi). In August, 1944, a special section (Gruppe IV) was created to coordinate the work of all departments in the armed forces which were interested in cipher matters.¹⁶² From September, 1944, until January, 1945, special bi-weekly conferences on security were held under the chairmanship of Dr. Huettenhain of Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi). Their purpose was to achieve "unity among all German authorities using cipher systems", and out of them grew the unofficial Army-Navy-Air coordinating committee.¹⁶³ While Dr. Huettenhain could state with pride that the conference and the committee officially confirmed the preeminence of the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi) as the main authority on cipher matters, it did not have any real powers. Recommendations could be made, but there was no obligation to comply. Furthermore, only service systems were covered.¹⁶⁴

Foreign Office (Pers Z) representatives were invited to attend the meetings as guests. Usually Hauthal of the Cryptographic Section (Pers Z Chi) or Dr. Schauffler attended. Both Dr. Huettenhain and Lt. Col. Mettig stated that the Foreign Office went its own way in cipher security. Mettig is author of the statement that the Foreign Office "remained aloof and... would not cooperate, as it was not prepared to let other authorities see its ciphers".¹⁶⁵ Dr. Huettenhain's statement

¹⁶²I 96, Page 13

¹⁶³I 84, Page 4; I 176, Page 10

¹⁶⁴I 84, Page 30

¹⁶⁵I 96, Page 13

is requoted here:

"OKW/Chi was never allowed to know the details of the ciphers used by the Foreign Office. He (Huettenhain) knew that one-time pads were used, and he had one met Schauffler and Hauthal. Even toward the end when there was a further attempt to centralize security under the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi), the Foreign Office would not come into line. Selchow strongly opposed, it, preferring to remain independent."¹⁶⁶

On the other hand, there is one instance of Foreign Office usage of equipment and systems furnished by the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi). Dr. Schauffler noted that the Foreign Office used the Cipher Teleprinter (Geheimschreiber). The Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi) was responsible for the security of this device, having developed it and furnished it to the Foreign Office.¹⁶⁷

b. Cryptanalytic Cooperation.

The Pers Z S/Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi) relationships in the cryptanalytic field contrast sharply with the collaboration, or lack of collaboration, in the cryptographic field. Both organizations considered diplomatic codes and ciphers as a primary commitment, with military attache systems as the exclusive province of the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi). Since the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi) was junior in the field to Pers Z S, a greater degree of jealousy and a lesser amount of cooperation might have been expected. However, from available sources it seems clear that

¹⁶⁶ I 31, Page 15

¹⁶⁷ I 22, Para 115

the cryptanalytic collaboration between the two agencies was the most extensive and probably the most successful of all the Pers Z S cooperation ventures. Duplication there was, and too much of it, but it is probable that this duplication was furthered by the attitude of jealous secrecy at the top of Pers Z, and a certain amount of lower-level resentment at the encroachments on a field which had once been exclusively in the possession of Pers Z S.¹⁶⁸

Keitel, perhaps the most objective of the top leaders interviewed by TICOM (but also palpably uninformed on technical matters), characterized the Foreign Office as "extremely secretive and jealous about anything their bureau produced... Von Ribbentrop always wanted to keep it strictly to himself."¹⁶⁹ Rave, Hierer and Grosse, who were on loan to Pers Z S from the Signal Intelligence Agency of the Supreme Command Armed Forces, (OKW/Chi) remarked on the duplication existing, and commented that Fenner and Paschke worked to avoid it. "Their efforts were not regarded with favor by Selchow", who thus appears again in the role of obstructionist.¹⁷⁰ Senior Specialist (Oberregierungsrat) Scherschmidt of Pers Z S, a veteran of 25 years cryptanalytic service, held a poor opinion of the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi) translations in the Turkish field, and thought their results were disproportionate to the number of persons involved.¹⁷¹ Dr. Rohrbach of Pers Z S was more than a little scornful toward the loaned personnel, characterizing them as having a lower level of capability than the regular Pers Z S members.¹⁷²

¹⁶⁸ See DF 17, T3273

¹⁶⁹ I 143, Para 37

¹⁷⁰ I 22, Para 56

¹⁷¹ I 103, Page 3

¹⁷² I 22, Para 50

Assuming that some duplication and some personal jealousies did exist, the overall picture of the Pers Z S relationship with the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi) is reasonably good. In the first place, Dr. Paschke and Principal Specialist (Ministerialrat) Fenner of the OKW Signal Intelligence Agency were old friends, both having been born in St. Petersburg.¹⁷³ By virtue of their positions these men were in a position to eliminate a substantial amount of duplication and friction. For example, when Pers Z S solved a new system which had a traffic content dealing with non-diplomatic matters, it was handed over to the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi) for exploitation.¹⁷⁴ In 1940, after Pers Z S had worked on Scandinavian systems for three months, all Scandinavian work was transferred to the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi).¹⁷⁵

There were exchanges of personnel, the exact extent of which cannot be determined. Keitel is author of the statement that he "had put a few people at the disposal of von Ribbentrop... at the outbreak of the war."¹⁷⁶ This group of people may well have worked on Chinese systems, for Schauffler mentioned that at the beginning of the war Chinese was taken up again, with the collaboration of the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi), which supplied the personnel.¹⁷⁷ Rave, Hierer and Grosse of the Chinese Group were all Signal Intelligence Agency of the Supreme Command German Armed Forces (OKW/Chi) personnel, loaned to Pers Z S in December, 1943, to assist on Chinese

¹⁷³ I 172, Para 11. It is not intended to imply that Fenner and Paschke collaborated closely at all times. Questions of agency policy must have overridden friendship. For example, Fenner did not approve of contributions by Dr. Huettenhain to Dr. Schauffler's reports (I 31, Para 52). The military are also known to have engaged in a certain amount of cryptanalytic body-snatching. For example, a certain Dr. Rudolf Kochendoerfer, a leading mathematical cryptanalyst under Dr. Kunze in 1941, turns up as a corporal (Obergefreiter) in OKW/Chi in 1945. I 176, Page 8

¹⁷⁴ I 22, Para 106

¹⁷⁵ I 22, Para 182

¹⁷⁶ I 143, Para 37

¹⁷⁷ I 22, Para 20

and Japanese traffic. Zastrow, the Pers Z S expert on U. S. systems was on one occasion loaned to the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi) to work in their British-American group.¹⁷⁸

As pointed out in the Introduction, there is some inconclusive evidence that parts of the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi) may have been actually housed with Pers Z S. Keitel and Schauffler (cf. supra) mentioned a fairly extensive collaboration on Chinese at the beginning of the war. In his interrogation Rave might have implied that, in late 1943, after the RAF bombings of Berlin, the Chinese Section of the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi) was at Im Dol, Dahlem, the Pers Z S address.¹⁷⁹

Lt. Col. Mettig stated that, after the bombing,

"Parts of OKW/Chi were accommodated with the Foreign Office... Thus, in March, 1945, when OKW/Chi was moved to Halle-Nietleben, the equivalent parts of the Foreign Office accompanied it. These departments were thence to move to Eilenburg."¹⁸⁰

Eilenburg is 10 miles from Zschepplin, the final location of a large part of the Pers Z S personnel. An unidentified part of Pers Z S was at Halle-Nietleben, and subsequently moved on to Zschepplin.¹⁸¹ Since the senior member of the OKW/Chi group was 1st Lt. Adler, head of the Japanese Section, it might be assumed that the Pers Z S Japanese-Chinese section was the "party" mentioned.

¹⁷⁸I 22, Para 84

¹⁷⁹I 22, Para 52. "Rave had joined the OKW in October, 1941. He was first at Tirpitzufer 72-76 until it was bombed out, then at Im Dol, Dahlem." This same failure to dissociate Pers Z S and OKW/Chi is apparent in I 150, Page 8, where Uffz. Beyreuther mentioned Rave and Hierer as OKW/Chi members, both with military ranks.

¹⁸⁰I 96, Page 5

¹⁸¹I-1, Page 7

In summation, it can be said that:

- (1) The liaison between the Japanese-Chinese groups in Pers Z S and the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi) appears to have been extraordinarily close.
- (2) There is some evidence that, from November, 1943, until the end of the war, the two groups may have operated as one.

In other respects, the collaboration between the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi) was also satisfactory. Certain problems were tackled on a cooperative basis, with a division of work. On the American State Department Strip Cipher ("O-2"), the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi) worked on the point-to-point traffic, while Pers Z S worked on the circular traffic.¹⁸² In the case of the Japanese "Red" Machine, Pers Z S worked on traffic from even days while the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi) worked on odd days.¹⁸³ Results were exchanged. When the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi) was bombed out in November, 1943, it seems to have made good use of the Pers Z S files until its own working material could be replaced. Tribute was paid by Colonel Kettler to the "good relations, both personal and professional, with the Foreign Office, which were then of great assistance."¹⁸⁴

A detailed listing of known examples of Pers Z S collaboration with the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi) follow .

¹⁸²I 31, Para 52

¹⁸³I 31, Para 53 It is worthy of noting that an identical "modus vivendi" was in effect from 1940 to 1942 between the U. S. Army and the U. S. Navy! This sort of "arrangement" was worked out in the U. S. by the "practical people" and not by the technical people concerned-- no doubt the German equivalent arrangement was worked out by the corresponding people!

¹⁸⁴Zip/Sac, June 4, 1945, Page 3. OKW Activity Report for January 1, 1944, to June 25, 1944.

Detailed summary of cryptanalytic collaboration with the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi):

(a) Brazil

BRAS B2.

This was a partially-alphabetic, five-letter, 82,400 group code. After Pers Z S had recovered about 2,200 groups, a copy of the original book was received from OKW/Chi.¹⁸⁵

(b) England and the British Empire.

1. The Interdepartment Cipher, a five-figure system.

Pers Z S did not work on this system after the summer of 1942 or early 1943. However, OKW/Chi furnished a copy of the captured book and the solved additive sequences to Pers Z S.¹⁸⁶

2. Code B30

This was a four-figure, two-part code. At the beginning of November, 1942, about 750 groups were turned over to OKW/Chi for copying. Idents were also furnished to Pers Z S by OKW/Chi.¹⁸⁷

3. Code B31

This was another four-figure, two-part code (possibly the Foreign Office R Code of 1941?). In August, 1942, Pers Z S turned over about 1500 solved groups to OKW/Chi. Thereafter a regular exchange of solved groups was carried out between the two agencies.¹⁸⁸

4. Code B22.

This was a five-figure, one-part code, known to the British as the Government Telegraph Code. It was also used by Eire for diplomatic transmissions. Pers Z S gave OKW/Chi all the Irish substitution and additive keys on this code.¹⁸⁹

¹⁸⁵ D16 Report #2 p 3

¹⁸⁶ I 172, para 13; D 16, Report #2, p 1

¹⁸⁷ I 172, para 14; D 16, Report #4, p 2

¹⁸⁸ D 16, Report #4, p 2

¹⁸⁹ I 172, para 14

(c) Hungary.

In 1940 Dr. Paschke conferred with Fenner and Seifert of OKW/Chi with reference to initial Pers Z S work on Hungarian systems. It was agreed that Pers Z S should work on the system designated as "U3". It is not known whether or not any action was instituted.¹⁹⁰

(d) Italy.

Pers Z S apparently considered itself the senior partner in the cooperative effort undertaken on Italian systems. The 1939-1940 reports from the Italian group mention that Pers Z S had broken the Italian diplomatic codes after OKW/Chi and the Austrian cryptanalytic organization had said the work was impossible, that OKW/Chi had no success when the exchanges of book groups and enciphering tables were terminated, etc.¹⁹¹ The reports imply that Pers Z S considered its collaboration with Goering's "Research" Bureau more fruitful than that with OKW/Chi, although the OKW/Chi intercept was considered to be superior.¹⁹² At the end of 1940 OKW/Chi and Pers Z S exchanged book groups on 4 codes, and there was a current exchange of solved encipherment tables.

There is little information covering the years 1941-1945, but Dr. Deubner's statement that "there was close cooperation with OKW/Chi" on Italian problems is probably correct.¹⁹³

(e) Japan.1. JB 57

JB 57 was a major Japanese diplomatic code. Toward the end of 1941, Pers Z S and OKW/Chi, working independently, solved the first daily keys.¹⁹⁴

2. "Red" Machine.

Pers Z S worked on the even days, while OKW/Chi worked on the odd days.¹⁹⁵

¹⁹⁰T 2043, Film 9, Report of the Group Austria-Hungary, dated April 4, 1940

¹⁹¹See T2252

¹⁹²T 2252, Annual Report of the Italian Group for the Year 1940

¹⁹³I 22, Para 172

¹⁹⁴D76, Film 41, 1941 Report of the Japan-Manchukuo-China Group.

¹⁹⁵I 31, Para 53

(f) Mexico.

Xepit.

This five-letter code was compromised when OKW/Chi turned over a photocopy to Pers Z S on November 25, 1942. Pers Z S had broken it on the preceding day.¹⁹⁶

(g) Portugal.

"205"

OKW/Chi gave Pers Z S a photocopy of this five-figure code book on December 14, 1942. Before the compromise, there had been a regular exchange of group meanings.¹⁹⁷

(h) Russia.

There was no confirmed example of Pers Z S OKW/Chi collaboration on Russian systems. In February, 1934, there were Reichswehr-Pers Z S discussions on Russian military systems. Lt. Colonel Mettig stated that "after an unknown date" OKW/Chi did not work on Russian diplomatic traffic.¹⁹⁸

(i) Turkey.

Rave, Hierer and Grosse said there had been "some co-operation on Turkish" early in 1943.¹⁹⁹

¹⁹⁶D16, Report #4, p 5

¹⁹⁷D16, Report #4, p 3

¹⁹⁸I 96, Para 14

¹⁹⁹I 22, Para 56

(j) United States of America.

1. Code B6A

This five-letter code (called A1 by the State Department) was solved in September, 1939. A photocopy was received from OKW/Chi in 1941.²⁰⁰

2. Code B7

There is no direct mention of liaison on this system, but Pers Z S personnel appeared to be cognizant of the status of solution at other agencies, including OKW/Chi.²⁰¹

3. Code B8

At the end of June, 1941, Pers Z S received a copy of this code (the Brown Code) from OKW/Chi.

4. "SV" (Diplomatic Strip System 01)

"In the summer of 1941 Pers Z S received from OKW/Chi a photocopy of the instructions for use, and 4 series of strips, which deciphered a number of messages." This appears to have been the Strip Device M-138A.²⁰³ In the case of one (unidentified) U. S. Strip System, the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi) worked on point to point traffic, while Pers Z S worked on circular traffic.²⁰⁵

19. Liaison with Foreign Cryptanalytic Agencies.-- All the Pers Z S personnel interrogated were unanimous in stating that they had never collaborated in any way with foreign (Finnish, Hungarian, Italian or Japanese) cryptanalysts. Pers Z S had never been visited by foreign cryptanalysts.

²⁰⁰ DF 15, Introduction, p 4

²⁰¹ DF 15, pages 5, 6, 8

²⁰² DF 15, Introduction, p 4

²⁰³ DF 15, p 5

²⁰⁴ I 31, p 10. "SV" probably German abbreviation for Strip System (Streifenverfahren).

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Chapter V. Intelligence

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20. Summary and Conclusions.-- In summarizing the Pers Z S/Foreign Office organization for intelligence, as opposed to its organization for cryptanalysis, the following conclusions seem valid:

a. The question of intelligence output, and of organization for evaluation and dissemination, were neglected in the interrogations.

b. The personnel interrogated about this phase of their work, had either forgotten about the principal agency successes, or were apathetic and uninformed about the intelligence value of their activities.

c. No definite information is available as to the distribution of the Pers Z S decodes, their intelligence content, or their consideration and reception by higher authorities.

d. The organization seemed overly preoccupied with cryptanalysis as a science, and apparently did not think in terms of cryptanalysis as a prime source of intelligence.

21. Lack of Data on Intelligence in the Interrogations.-- The Pers Z S organization for intelligence, its evaluation and dissemination, seems to have been weak. From von Ribbentrop down, those interrogated could recall little important information which had been obtained from their work. Either there was little or no important intelligence in their decodes, or the material contained therein was never properly evaluated and fed back by higher authorities. The former impression must be erroneous.

An organization which read the Japanese "Red" machine and achieved nearly 100 per cent success on Italian diplomatic codes, must have produced some important intelligence results. The answer to the riddle must be sought elsewhere. It may have been the fault of internal organization (or lack of organization) for intelligence, or the attitude of the organization's leaders.²¹⁰

One lead of potential significance was overlooked in the interrogations. Until September, 1941 (and probably later) there was a relatively high-ranking Pers Z S official, whose responsibility was the evaluation of message content from an intelligence point of view. This was Technical Assistant (Wissenschaftlicher Hilfsarbeiter) Friedrich Niendorff, who had seniority in the organization dating from October, 1919.²¹¹ There is no mention of Niendorff in the 1945 interrogations or personnel lists. In an organization which worked on the systems of some 50 countries and was invariably short of personnel, it is doubtful whether a separate evaluation group was overly desirable or efficient. However, had Niendorff been available, he might have been able to speak with some knowledge of the Sections's effectiveness as an intelligence agency. No attempt was made to cover the work done by Dr. Horn, who was in charge of cribs, files and personality lists (Archiv), and who presumably had some information along these lines.

22. Handling and Processing Intelligence.-- According to Miss Friedrichs, no intelligence was extracted from the material produced, except such as was necessary to continue reading the traffic.²¹² Dr. Karstien, on the other hand, stated that the selection of material for publication was guided by considerations as to its possible intelligence value. This selection was made by the group head (Referent) on the basis of knowledge and experience.²¹³ Since Pers Z S apparently never had sufficient personnel to allow adequate cryptanalysis, it is probable that the group heads never had sufficient time to do a thorough analysis of the solved traffic.

²¹⁰The interrogators also placed little emphasis on intelligence, and must share a part of the responsibility.

²¹¹See Anlage 2 to Pers Z 869/41 in TF 24

²¹²I 22, Para 37

²¹³I 22, Para 77

Miss Friedrichs and Scherschmidt apparently took pride in the careful standards of translation set up in the Section. Both commented on the rigid practices which prevailed in Pers Z S, in contrast to the looser practices prevalent with the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi).²¹⁴ If the pride in careful translation evidenced by the above statements be taken in conjunction with Miss Friedrichs' statement as to work tempos, the impression could be drawn that care and precision in all phases of the work took precedence over considerations of urgency (intelligence?).²¹⁵

Considering the emphasis laid by Schauffler and Rohrbach on the "Scientific" (wissenschaftliche) aspects of their work, and considering the strong academic tinge of the group as a whole, one may well wonder whether the Section as a whole had not fallen into that error of thought which may too easily dominate a cryptanalyst's work: viz., that cryptanalysis, an abstract science and the principal element in signal intelligence, may become an end in itself, and that the raison d'etre of cryptanalysis- the production of intelligence-may be obscured by these considerations.

a. Lack of Recognition by Higher Authorities.

This tendency can be magnified if cryptanalysts are not kept constantly aware of the meaning and significance of their products, the importance of key messages, and the action taken by other authorities on the strength of cryptanalytic information. In this important respect the Pers Z S organization seems to have been deficient. Dr. Karstien's somewhat cynical statement that there was no official recognition of the work done by the organization is countered in part by Paschke's letter of commendation from von Weizsaecker for his Italian work, and the War Service Cross (KVK II) which was awarded to Dr. Rohrbach. These were probably isolated instances. Miss Friedrichs stated

²¹⁴ I 22, Para 38; I 103, Para 2. i.e. omitting corrupt groups or obscure passages.

²¹⁵ "There was no sense of urgency in the office, deciphered messages were not transmitted by teleprinter to their recipients." I 22, Para 37

that there had been no evidence of appreciation of the work done by the organization.

"From time to time copies of messages issued had been returned to them bearing a stamp indicating they had been seen by the Fuehrer. Otherwise, no indication of the importance attached to their work had ever penetrated to the level at which she worked."²¹⁶

If higher authorities did not tell the cryptanalysts that their work was of significant importance, it is not to be wondered that the technicians felt their work ignored and withdrew more and more into their own world of two-part codes and enciphering tables.

b. Attitude of the Pers Z S leaders.

Some responsibility for the failure to disseminate internally information concerning successes must be assigned to the Pers Z S leaders. Selchow has already been characterized as a "competent administrator, who understood little about cryptography, and was content to let the heads of the subsections run their affairs as seemed best to them."²¹⁷ Paschke and Miss Hagen knew more about message content than did junior personnel.²¹⁸ Miss Friedrich stated that there was little encouragement given to the communication of results inside the organization by junior members, who were encouraged to mind their own business.²¹⁹ Apparently the Pers Z S leaders knew in a general way of their successes, but denied this information to the juniors who most needed the encouragement. It is possible of course, that there was little of great importance in the systems which Pers Z S read, but this seems scarcely credible. In all probability, the Pers Z S leaders were just not "intelligence-minded." They were cryptanalysts, they thought primarily in terms of cryptanalysis, and intelligence was to them a by-product of their work.

²¹⁶I 22, Para 36

²¹⁷I 22, Para 35

²¹⁸See I 22, Paras 107, 108, 110; I 27, Paras 3, 4.

²¹⁹I 22, Para 39

c. Handling and Processing of Decodes.

Information dealing with the assignment of missions is also limited. Instructions from von Ribbentrop were invariably of a general nature, and solely concerned with the subject matter of intelligence- Poland or the invasion. He did not concern himself with the details of systems. Selchow usually dealt direct with von Ribbentrop and did not go through Schroder or von Weizsaecker. To further confuse the issue of mission assignment, Miss Hagen stated that she received her instructions direct from the "Secretary" (Under-secretary Steengracht von Moyland).²²¹

The distribution given to decodes is not known. The evidence is inconclusive even on the question of distribution within the Foreign Office. According to Dr. Paschke, von Ribbentrop "read only about 20-30 per cent of the material produced. His secretaries, Weber and von Loesch, selected these for him."²²² At one point in his interrogation von Ribbentrop stated that the selection of decodes for his own personal perusal was made by Inspector Schmidt. He saw between one and four items a day, or less.²²³ His principal assistant, Steengracht von Moyland, or one of the secretaries, determined what distribution should be made outside the Ministry. Steengracht also drew his attention to certain other items.²²⁴ If all these statements be taken at face value, at least five persons were involved in determining the distribution of decodes, with the consequent disadvantages of divided responsibility and possible loss of continuity.

Nor is it known where and how the Pers Z S intelligence was integrated into the total intelligence picture. All the top personalities interrogated at Nuernberg agreed that there was no central clearing house for intelligence at the top, and that this was unfortunate. There is some evidence that, due to the lack of high level coordination, the same decode might be passed to a ministry from two or three sources. Keitel did not

²²⁰I 172B, Par. 3

²²¹I 172A, Para 18

²²²I 172B, Para 9

²²³I 143, Para 47

²²⁴I 143, Para 48

state whether or not he received all the Pers Z S decodes. Jodi knew in a general way of the Foreign Office achievements, but did not receive the Pers Z S output.²²⁵ Where a message solved by the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi) was not also in the hands of the Foreign Office, then a copy of the decode (VN) was passed to them.²²⁶ Keitel also pointed out that the Foreign Office were

"extremely secretive and jealous about anything their bureau produced. If, by any chance, Keitel produced direct to Hitler an OKW/Chi diplomatic decode and did not pass it via the Foreign Office, they became extremely annoyed. Actually, this happened very rarely."²²⁷

No mention is made of decodes exchanged between agencies for technical purposes, and decodes exchanged with agency heads to be used for intelligence purposes.

- 225 I 143, Para 6
226 I 143, Para 37
227 I 143, Para 37

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Chapter VI. The Cryptographic Section of the
German Foreign Office (Pers Z Chi)

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23. History and Personnel.-- Little is known from TICOM sources concerning the history, strength and activities of the German Foreign Office Cryptographic Section (Chiffrierdienst des Referats Z in der Personalabteilung des Auswaertigen Amtes, abbreviated Pers Z Chi). It was responsible for the compilation, preparation and distribution of the codes and ciphers used by the German Foreign Office, as well as the cryptographic security of these systems. In the matter of security, senior personnel from the Cryptanalytic Section (Pers Z S) assisted the Cryptographic Section (Pers Z Chi) as consultants.²³⁴ The Cryptographic Section was latterly (1943-1945) under the head of Senior Specialist (ORR) Horst Hauthal. Its previous head, a Senior Specialist (ORR) Langlotz, died in 1943.²³⁵ At the end of the war, when Pers Z S was evacuated from Berlin, Pers Z Chi remained behind. No trace of the organization was found by TICOM personnel.

24. Cryptographic Work.-- Dr. Paschke, a consultant on cryptographic security, remarked that the Germans were convinced that their systems were cryptographically secure.²³⁶

²³⁴I 172B, Page 7; I 22, Para 8

²³⁵I 22, Para 70

²³⁶I 22, Para 118

It is possible that this attitude of complacency was responsible for some of the Anglo-American successes against Foreign Office systems. Pers Z Chi must have been responsible for the compilation of the "Deutsches Satzbuch" and the additive systems used for its encipherment, all of which were read by Anglo-American cryptanalysts. One of the additive systems was theoretically a "one-time pad" system, but was insecure because the additive used was predictable. This was the GEE additive (ASA trigraph) printed on the Number Printer (Numerierwerk) described in Volume 2 of this paper. An inspection of both recovered and captured daily key tables (Tagesschlüssel) used in enciphering the indicators in the "Floradora" (ASA trigraph GEC) additive system indicates that these key tables may have been made up by a machine similar to the Number Printer (Numerierwerk). There is no indication as to how the text additive itself was generated.

The Cryptographic Section seems to have been interested in improvements for the Enigma machine. In February, 1942, Schauffler and Hauthal discussed the construction of a new cipher machine with Willi Korn, chief engineer of the Enigma firm of Heimsoeth and Rincke, Berlin. It was to be called the Machine 42 (Maschine 42) and was in effect an Army plugboard Enigma with three additional rotors inserted in front of the plugboard. The machine never passed the theoretical development stage because of engineering and procurement difficulties.²³⁷

So far as is known from TICOM sources, the Foreign Office Cryptographic Section did not collaborate with any other German cryptographic agency. Schauffler and Hauthal attended the 1944-1945 meeting of the unofficial Army-Navy-Air coordinating committee on cryptographic security, which were held under the auspices of the Signal Intelligence Agency of the Supreme Command Armed Forces (OKW/Chi). A plugboard Enigma with a printing attachment, bearing the German Foreign Office label, has been captured, indicating that the military style Enigma was used for Foreign Office communications. It also used the military style cipher teleprinters.²³⁸

²³⁷T 5

²³⁸I 22, Para 115

TAB
A

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Tab A

- Aler 1st Lt. Chief of Subsection VI3 of OKW/Chi
(Japan, China)
- Administrative Section .See Pers Z Gen. Section responsible
for personnel and administrative problems for all Foreign
Office Z Branch, incl. Pers Z S, Pers Z Chi & Pers Z F.
- ASA Army Security Agency (US)
- Badoglio, Marshal .Prime Minister of Italian Government
September, 1943-1945
- Benzing, Dr. Johannes Specialist (RR). Cryptanalyst. Head of
Pers Z S group for Near Eastern languages.
- Beyreuther, Heinz, Sergeant (Uffz). Former cryptanalyst in
Japanese Subsection at OKW/Chi
- Brandes, Dr. Wilhelm, Senior Specialist (ORR). Cryptanalyst.
Head of Pers Z S group for France, Belgium, Holland,
Switzerland.
- Buggisch, Dr. Otto, S/Sgt (Oberwachtmeister). Cryptanalyst.
OKW/Chi. Formerly with Inspectorate 7/VI
- Burgscheidungen. German village in Kreis Querfurt, Thuringia.
Location of part of Pers Z S April/May, 1945.
- Communications Section. See Pers Z F. Section in Z Branch,
Foreign Office, which was responsible for Foreign Office
communication networks, including telephone, teletype and
radio. 1945 head was ORR Hoffmann (Funkreferat).
- Cryptanalytic Section. See Pers Z S. Cryptanalytic Section in
Z Branch of the German Foreign Office. (Sonderdienst des
Referats Z in der Personalabteilung des Auswaertigen Amtes).
- Cryptographic Section. See Pers Z Chi. Foreign Office Section
in Z Branch responsible for preparation, compilation,
distribution and security of Foreign Office codes and
ciphers. 1945 head was ORR Hauthal (Chiffrierdienst des
Referats Z in der Personalabteilung des Auswaertigen Amtes).
- D16 Translations. "Annual Reports of the (Pers Z S) Group
British Empire, Ireland, Thai, Portugal, Spain and
Latin America." A TICOM Publication.
- D54 Translations of various Z S reports dealing with work on
French, Belgian, Dutch, Swiss and Rumanian systems).

Deubner, Dr. Otfried, Technical Asst. (WHA). Cryptanalyst. Deputy to Dr. Paschke in Pers Z S Italian-Greek-USSR group.

DF 17 "Miscellaneous Items from the Files of the German Foreign Office." A translation of T3273 and T165. A TICOM Publication.

Doenitz, Karl, Admiral. Head of German Admiralty. Briefly head of German govt. April/May/1945.

Fenner,....., Principle Specialist (Ministerialrat). Cryptanalyst. Head of Section IV of OKW/Chi.

Friedrichs, Miss Asta, Technical Asst. (WHA). Pers Z S cryptanalyst. Deputy to Dr. Karstien in Slavonic language section. Leading female personality in Pers Z S.

Gerstmeyer, Dr. Liaison Officer from Goering's "Research" Bureau (FA) to the Foreign Office.

Grosse, Sr., Arthur. Pers Z S cryptanalyst, Chinese and Japanese language group. On loan to Pers Z S from OKW/Chi.

Grunsky, Dr. Helmut, Technical Asst. (WHA). Pers Z S cryptanalyst. Group head in Dr. Kunze's mathematical-cryptanalytic Subsection.

Hagen, Miss Ursula, Technical Asst. (WHA). Pers Z S Cryptanalyst. Head of language group England, Ireland, Spain, Portugal and Latin American countries.

Hauthal, Horst, Senior Specialist (ORR). Head of Pers Z Chi 1945.

Hermsdorf. Village in Silesia. Location of Pers Z S Mathematical-Cryptanalytic Subsection 12/43-3/45.

Hierer, Edgar. Minor Pers Z S cryptanalyst. On loan from OKW/Chi to Japanese-Chinese language group.

Hirschberg. Village in Riesengebirge. Location of part of Pers Z S 12/43-3/45.

Hoffmann, Ernst, Senior Specialist (ORR). Head of Pers Z F 1945.

Horn, Prof. Dr., Technical Asst. (WHA). In charge of Pers Z S files and records (Archiv) 1945. Not captured.

Huehnke, Miss Dr. Annelise, Technical Asst. (WHA). Pers Z S cryptanalyst. Group head in Mathematical-cryptanalytic Subsection.

Huettenhain, Dr. Erich. Chief cryptanalyst for OKW/Chi from 1937.

- I-1. Final Report of TICOM Team 3 on the Exploitation of Burgscheidungen, dated June 8, 1945. Later canceled as I-1, and renumbered as a Team Report. A TICOM Publication.
- I-22. "Interrogation of German Cryptographers of the Pers Z S Department of the Auswaertiges Amt." A TICOM Publication.
- I-25. "Interrogation of Five Members of the RLM/Forschungsamt at Schloss Gluecksburg, near Flensburg, on 15th and 21st June 1945." A TICOM Publication.
- I-27. "Preliminary Interrogations for Fraeulein Hagen, Head of the English Section of Pers Z S, Auswaertiges Amt." A TICOM Publication.
- I-31. "Detailed Interrogations of Dr. Huettenhain, Formerly Head of Research Section of OKW/Chi, 18-21 June, 1945." A TICOM Publication.
- I-54. "Second Interrogation of Five Members of the RLM/Forschungsamt." A TICOM Publication.
- I-58. "Interrogation of Dr. Otto Buggisch of OKW/Chi." A TICOM Publication.
- I-63. "Interrogation Report on ORR Herrmann Scherschmidt of Pers Z S Auswaertiges Amt." A TICOM Publication.
- I-84. "Further Interrogation of RR Dr. Huettenhain and Sdf. Dr. Fricke of OKW/Chi." A TICOM Publication.
- I-89. "Report by Dr. H. Rohrbach of Pers Z S on American Strip Cipher." A TICOM Publication.
- I-96. "Interrogation of Oberstleutnant Mettig on the Organization and Activities of OKW/Chi." A TICOM Publication.
- I-103. "Second Interrogation of Reg. Rat Herrmann Scherschmidt of Pers Z S Auswaertiges Amt on Turkish and Bulgarian systems." A TICOM Publication.
- I-143. "Report on the Interrogation of Five Leading Germans at Nuremberg on 27 September, 1945 (Jodl, Keitel, Doenitz, Goering, von Ribbentrop)." A TICOM Publication.
- I-147. "Detailed Interrogation of Members of OKM 4 SKL III at Flensburg." A TICOM Publication.
- I-150. "Report by Uffz. Heinz Beyreuther on the Organization of OKW/Chi." A TICOM Publication.
- I-162. "Report on Interrogation of Kurt Sauerbier of RLM/Forschungsamt held on 31 August, 1945." A TICOM Publication.

I-172. Interrogation of Hagen and Paschke of Pers Z S.
 A TICOM Publication.

Jodl, Alfred, General. Chief of the Armed Forces Operations Staff.

Karstien, Dr. Hans-Heidrun, Specialist (RR). Pers Z S cryptanalyst. Head of Slavonic language group.

Kasper, Dr., Specialist (RR). Pers Z S Cryptanalyst. Head of Rumanian language group. Not captured.

Keitel, Wilhelm, Field Marshal. Chief of Staff, Supreme Command Armed Forces (OKW).

Kettler, Hugo, Colonel. Chief of OKW/Chi 1943-1945.

Kochendoerfer, Dr. Rudolf, Corporal. Mathematical cryptanalyst, formerly with Pers Z S, latterly corporal with OKW/Chi.

Krug, Hans-Georg, Technical Asst. (WHA). I.B.M. machine expert in Pers Z S.

Kunze, Dr. Werner, Senior Specialist (ORR). Head of Mathematical-Cryptanalytic Subsection of Pers Z S.

Lehmann, Dr. Bruno. Cryptanalyst, Former head of Greek language group in Pers Z S.

von Loesch, Karl Heinrich. Secretary to Foreign Minister von Ribbentrop.

Menning, Wilhelm. Deputy head of Pers Z S Rumanian language group. Not captured.

Mettig, Lt. Colonel. Second in command of OKW/Chi, 12/43-1945.

von Moyland. See Steengracht.

Muehlhausen. Location of elements of Pers Z S 1945.

Mueller, Dr. Hans-Kurt, Technical Asst. (WHA). Cryptanalyst. Head of Pers Z S American-Scandinavian group 1945.

Niendorff, Friedrich, Senior Specialist (ORR). In charge of Pers Z S intelligence evaluation 1941. Not captured.

Olbricht, Dr. Peter, Technical Asst. (WHA). Cryptanalyst, Pers Z S. Deputy head of Japanese-Chinese language group.

Oschmann,, Captain. Later Major. Head of Chiffrierabteilung in Reichswehrministerium 1932-34.

Pannwitz, Miss Dr. Erika, Technical Asst. (WHA). Cryptanalyst in Pers Z S. Group head in Mathematical-Cryptanalytic Subsection.

Paschke, Dr. Adolf, Senior Specialist (ORR). Pers Z S Cryptanalyst. Head of Linguistic-Cryptanalytic Subsection. Specialist in Italian.

Patzig,, Lt. Commander (Korvettenkapitaen). Unknown. Connected with Chiffrierabteilung, Reichswehrministerium 1934.

Pers Z Chi. See Cryptographic Section, German Foreign Office.

Pers Z F. See Communications Section, German Foreign Office.

Pers Z Gen. German name unknown. Z Branch administrative Section, German Foreign Office.

Pers Z S. See Cryptanalytic Section, German Foreign Office.

Rave, Kurt. Minor Pers Z S cryptanalyst. Worked in Japanese-Chinese group. Loaned to Pers Z S by OKW/Chi.

Ribbentrop, Joachim von, Foreign Minister. German Foreign Office.

Rohrbach, Prof. Dr. Hans. Pers Z S cryptanalyst. Group leader in Mathematical-Cryptanalytic Subsection.

Roy,, Senior Specialist (ORR). Head of Pers Z Gen 1945.

Sauerbier, Kurt. Cryptanalyst, head of Section 9-c, Main Section IV (Agent systems) in Goering's "Research" Bureau.

Schauffler, Dr. Rudolf, Senior Specialist (ORR). Senior cryptanalyst and probable head of Pers Z S.

Scherschmidt, Dr. Hermann, Senior Specialist (ORR). Pers Z S cryptanalyst. Head of Turkish language group.

Schimmel, Pers Z S cryptanalyst. Head of Yugoslav group.

Schmidt,, Inspector. Unknown. Probably Chief interpreter in German Foreign Office.

Schrader, Miss Hildegard, Technical Asst. (WHA). Pers Z S cryptanalyst. Deputy head of French, Dutch, Belgian and Swiss group.

Schroder,, Ministerial Director (Min. Dirigent). Head of main Section IV (Codes and Ciphers) in Goering's "Research" Bureau.

Schroeter, Dr. Karl, Technical Asst. (WHA). Pers Z S cryptanalyst. Group leader in Mathematical-Cryptanalytic Subsection.

Schultz, Klaus, Technical Asst. (WHA). Pers Z S cryptanalyst. Group leader in Mathematical Cryptanalytic Subsection.

Schwaeger,, Principle Specialist (ORR). Civil Servant, in charge of budget preparation in German Foreign Office.

- Selchow,, Minister (Gesandte) Head of Z Branch (Crypt-analysis, Cryptography, Communications) in the German Foreign Office.
- Steenbracht von Moyland. Former ADC to von Ribbentrop. Succeeded von Weizsaecker as Undersecretary in the Foreign Office May 1, 1943.
- T 56. Reports of the A Group. Reports and Studies by the American Group of the Cryptanalytic Section of the German Foreign Office 1919-1942.
- T 76. Situation Report of the Manchurian Group Beginning 1941. Notes and Reports on Japanese Cipher Systems 1919-1941.
- T 197. Unidentified Pers Z S Document covering work on Chinese.
- T 427. Chinese 5/L Diplomatic Traffic (Film 10).
- T 1062. Partially Reconstructed 3/1 code Afgh(anistan) 1.
- T 1067. Afghanistan Traffic 1939-1944.
- T 1068. Afghan Traffic 1939-1944.
- T 1074. 1941 Traffic and Worksheets- Iraq.
- T 1077. Washington - Addis Ababa Traffic, 1945.
- T 1169. Chinese Diplomatic Traffic and Decodes.
- T 1170. Old Material on HNM (abc)- Chinese.
- T 1172. Chinese diplomatic traffic and explanation of system.
- T 2038. Report on Polish Systems as of January 1, 1941.
Report on the Polish-Bulgarian Group, dated Aug. 13, 1941.
Report on Jugoslavia at Beginning of year 1941.
- T 2043. Report of the Group-Austria-Hungary, dated April, 1940.
- T 2050. See D 54.
- T 2052. Various Reports from "Gruppe Lehmann," the Pers Z S Greek group 1939-1940-1941.
- T 2252. Report of the Italian Group for the Year 1940.
- T 3273. See D F 17.
- Tranow,, Senior Specialist (ORR). Principal GAF crypt-analyst in Signal Intelligence Agency of the Supreme Commander, German Air Forces.

Weber,..... Foreign Office Privy Councillor, Secretary to
von Ribbentrop
Weizsaecker, Ernst von. Former Undersecretary in German
Foreign Office. In 1943 appointed Minister to the Vatican.
Wilhelm Wander Schule. School building in Hermsdorf (Silesia),
location of the Pers Z S Mathematical-Cryptanalytic
Subsection 12/43- 3/45.
Sastrowo, Karl, Technical Asst. (WHA). Pers Z S cryptanalyst.
Expert on U. S. systems.
Zscheplin. Village in the Delitsch-Eilenburg-Leipzig area.
Location of part of Pers Z S April, 1945.

CAPTURED DOC & INTERROG NUMBERS

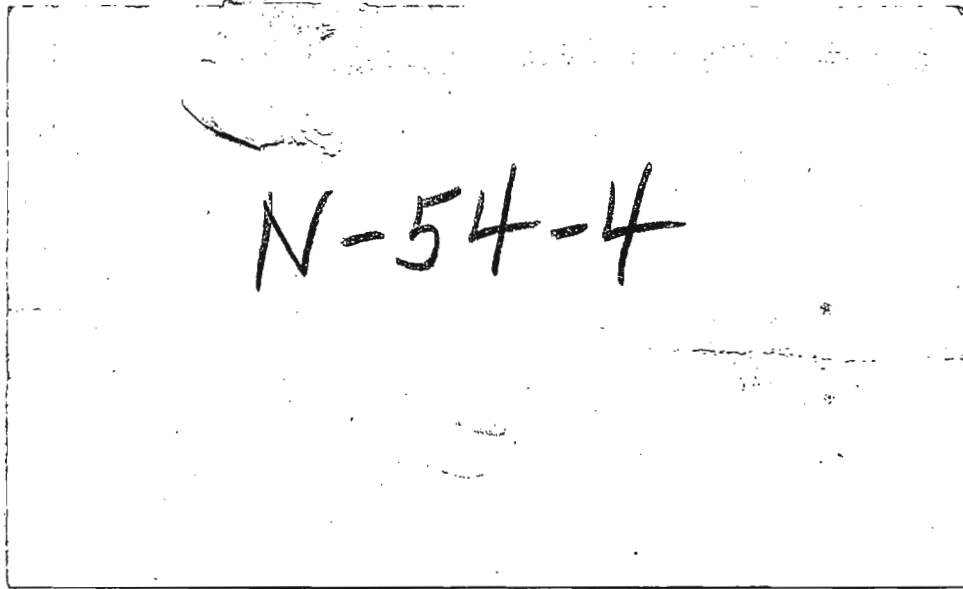
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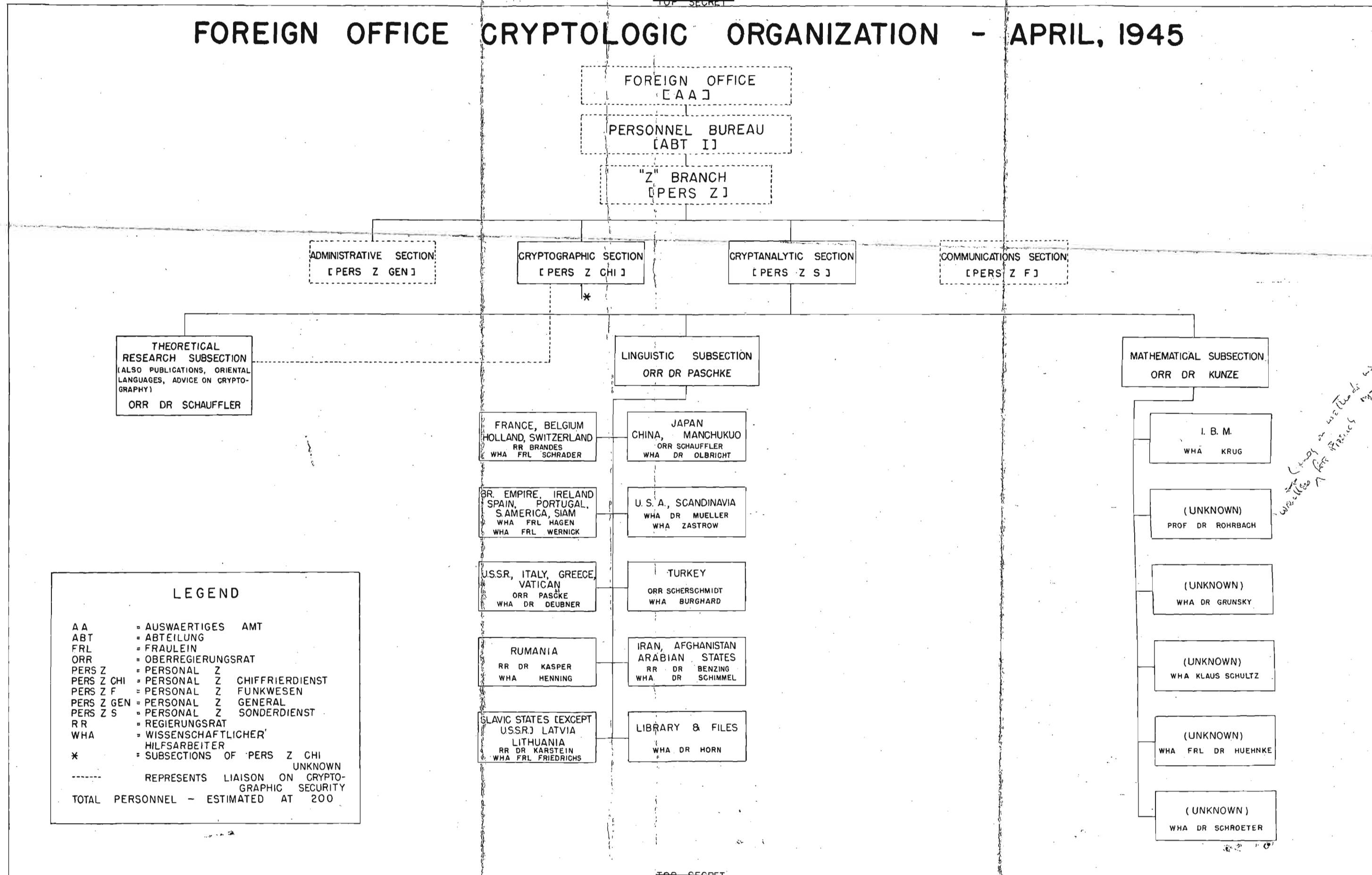
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FOREIGN OFFICE CRYPTOLOGIC ORGANIZATION - APRIL, 1945



LEGEND

AA = AUSWAERTIGES AMT
 ABT = ABTEILUNG
 FRL = FRAULEIN
 ORR = OBERREGIERUNGSRAT
 PERS Z = PERSONAL Z
 PERS Z CHI = PERSONAL Z CHIFFRIERDIENST
 PERS Z F = PERSONAL Z FUNKWESEN
 PERS Z GEN = PERSONAL Z GENERAL
 PERS Z S = PERSONAL Z SONDERDIENST
 RR = REGIERUNGSRAT
 WHA = WISSENSCHAFTLICHER HILFSARBEITER
 * = SUBSECTIONS OF PERS Z CHI UNKNOWN
 ----- REPRESENTS LIAISON ON CRYPTOGRAPHIC SECURITY
 TOTAL PERSONNEL - ESTIMATED AT 200

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